LXXX

VOL. XIII JANUARY, 1855. NO. 2.

THE WESTERN JOURNAL AND Civilian,

DEVOTED TO

Agriculture, Manufactures, Mechanic Arts, Internal Improvement, Commerce,

PUBLIC POLICY,

AND

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Published monthly at $5,00 per annum in advance.
Postage 1 Cent a month, payable quarterly in advance.

ST. LOUIS,
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1855.

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THE

WESTERN JOURNAL

and Civilian.

VOL. XIII. January, 1855. No. II.

ARTICLE I.

Improvement of Desmoines and Rock Island Rapids.

DID it not seem evident that unjust discriminations have been made against internal commerce by the National Government while legislating to promote foreign trade, we might remain silent on the subject of improving the western rivers during the existence of the present administration. But holding it to be a duty which individuals and communities owe to themselves to protest against acts of injustice, even in cases were there is no prospect of redress, we feel impelled to recur again to this subject lest it may be supposed that we have abandoned it altogether.

We shall not attempt to discuss the power or the duty of the General Government in respect to the improvement of rivers and harbors: these topics have been exhausted. Nor would we urge a measure upon the Executive which he had fully considered and rejected upon its merits.

Owing to the variety of objects embraced in the bill entitled "an act making appropriations for the repair, preservation and completion of certain public works heretofore commenced under authority of law," which passed the two houses at the last session of Congress, it was scarcely reasonable to have expected that it would receive the sanction of a President who was known to be a strict constructionist of the constitution in respect to internal improvements.

We have delayed writing this article for some time for the purpose of examining the grounds of the President's objections to the bill referred to; but as they are not embraced in his annual message, and as we desire to publish our views on this subject in the present number, we have no time to wait for the special message

which he promises. It is not to be expected that the President in his special message will indicate any particular object of improvement, which would receive his official sanction; but we are persuaded that the most ultra disciple of the school to which the President is supposed to belong could not consistently object to the improvement of the entrance to the Mississippi at its mouth, or to deepening its channel at the Desmoines and Rock Island Rapids. There are many other obstructions to the navigation of the Mississippi and its tributaries, the removal of which by the General Government we hold to be as constitutional as the work of deepening the channel at the mouth of the river; but having regard to the opinions and policy of the present administration, we would suffer them to remain for a season, and bring all our strength to bear upon objects which we have reason to believe attainable. Besides the greater probability of success, if we concentrate our efforts upon a bill appropriating means to improve the rapids and the channel at the mouth of the river, the improvement of the navigation at these points is of more vital importance to the solid prosperity of the Western States than that of any other part of the western rivers. Without these improvements no well defined system of commerce can be established in the valley of the Mississippi, and no matter to what extent our resources may be developed, the profits of our labor and enterprise will continue to be absorbed, in a great degree, by eastern capitalists and merchants. Unless the channel at the entrance of the Mississippi be so far improved as to admit the passage of the largest class of merchant vessels, New Orleans will lose her present relative importance in respect to New York and other eastern cities; and instead of being an "arm of the sea," the Mississippi may be regarded as an *inland river* of but little practical utility in the commerce and economy of the country.

But if we regard the public press as the exponent of the opinions of the people inhabiting the region of the upper Mississippi, we must conclude that thay feel little concern in respect to an outlet of that river to the Gulf of Mexico, and care as little perhaps about the improvement of the rapids. They seem to think that railroads to New York are more to be desired than navigation to St. Louis and New Orleans. But unfortunately for their calculations, when they are just upon the eve of enjoying the benefits of their railroads, free trade between the United States and Canada

is established by treaty, giving the grain grower of Canada an advantage in the eastern markets, by reason of his locality, of from fifteen to twenty per cent. over the farmer on the banks of the Mississippi. Canada is already a large producer of cereals—the principle staple of the valley of the upper Mississippi—and stimulated by free trade with the United States and the facilities of transportation which are being established by the construction of railroads, grain growing in that country will increase to an extent that will exclude wheat and other cereals produced in the region of the Mississippi almost entirely from the eastern markets. Indeed we are persuaded that it will not be long before we hear of Canada wheat in the markets on the Ohio river.

In this view of the subject it requires no extraordinary foresight te perceive that Iowa, Minnesota, Western Illinois and Western Wisconsin must look almost entirely to the South for a market for their staples. Hence it follows that the improvement of the rapids is a work of primary importance to the inhabitants of the extensive and fertile region watered by the upper Mississippi and its tributaries, and if they are true to their own interests, they will unite as one man in urging the subject upon Congress without delay.

We learn from a highly intelligent individual who has made diligent inquiry into the facts, that about forty steamboats were engaged during the last season in transporting the produce and merchandize which passes over the rapids. It is estimated that these boats make fifteen trips during the season of navigation, and carry, on an average, two hundred tons each. The total value of the commerce passing over the rapids annually, is estimated at from thirty-five to forty million dollars; and according to the estimates of intelligent and experienced individuals engaged in this trade, it is subjected to an annual burthen of five hundred thousand dollars by reason of these obstructions.

If this extra burthen upon the trade of the upper Mississippi amounted to five hundred thousand dollars in 1854, it will be but a few years before it will reach five millions unless other and better facilities of transportation be devised and established. Nor can this be regarded as an extravagant assumption, when we take into view the immense area of the upper valley of the Mississippi which remains unsettled, but is rapidly filling up with an industrious and enterprising population.

We are informed that the cost of opening a channel two hundred feet wide and four feet deep at the lowest stage of water throughout both rapids is estimated at only one million five hundred thousand dollars. This estimate, as we understand, includes the appropriations already made amounting to about one hundred and fifty thousand dollars.

During the years 1837 and 1838 the sum of about fifty-four thousand dollars was expended in an attempt to improve the navigation of the rapids under the superintendance of Col. Lee, of the Engineer corps; but no important benefit could be expected from the application of so small a sum. The work was abandoned by the government in the year 1838, and not resumed until August, 1854, Congress having appropriated the sum of one hundred thousand dollars for its prosecution, by an act passed under President Fillmore's administration, in 1853. Nearly one half of this appropriation has been expended under the superintendance of Major Floyd, of the Engineer corps, and unless a further appropriation can be obtained during the present session, the work must be again suspended. If the Western States acquiesce in the course of policy heretofore pursued in respect to the improvement of their rivers without making a well concerted and vigorous effort to reform that policy, they will deserve to occupy no better relation to the general government than that of provinces.

But we are persuaded that the people of the West are becoming weary and disgusted with the tantalizing and vacillating policy of the General Government in respect to the improvement of western rivers, and are disposed to scrutinize more closely than heretofore the conduct of those in power.

From a review of the history of legislation during the last twenty years, it would seem that there were certain measures and abstract principles which have been regarded by all parties as gamblers regard the implements of their games. Tariff, public land, slavery, and internal improvement divided and sub-divided into branches and denominations scarcely known except to the initiated, are shuffled and played by politicians with all the adroitness of professional sportsmen at a gaming table. The combinations of these political games are so infinite and complicated that the people are not expected to comprehend them: indeed, it is not intended that they should, for the whole process is designed to deceive them.

The western people have been the victims of stratagem and political combination sufficiently often to convince them, as one might suppose, that they have been outwitted by political manœuvering, and that it is time they should devise and adopt a new code of tactics.

As an introduction to a better system of legislating, we suggest that the true friends of western interests bring forward a bill at the present session of Congress providing for an appropriation sufficient in amount to complete the improvement of the DesMoines and Rock Island rapids. There are obvious and solid reasons in favor of making the entire appropriation by one act of legislation. Contractors would undertake the work at a less price, or, the government, if it chose to do so, could carry it on with a greater degree of economy than if its prosecution should depend upon the contingency of annual appropriations; the estimates of the financial department of the government could be made upon a more certain basis; and, more than all, the benefits accruing from the work would be enjoyed by the country at an earlier day.

We are informed by the present superintendent that a due regard to the economy of carrying on the work will require the expenditure of two hundred thousand dollars per annum, and that, owing to the shortness of the working season, this is as much as could be profitably applied. Hence, it will be perceived that it will require from six to seven years to complete the work. But if left to the contingencies incident to party legislation, we conclude that few of the present generation will live to see the work accomplished.

Thus it will be seen how important it is that a sufficient appropriation should be made by one act; and, moreover, that that should be passed without delay.

We have suggested the improvement of the rapids as an object of experiment, because if the improvement of river navigation, at any point of any stream upon the continent can be regarded constitutional, this must be entitled to receive its full share of government aid; and furthermore, because, in our opinion all things being considered, a greater amount of benefit will be derived from it, in proportion to the money expended, than from any other work within our knowledge. Every State bordering on the Mississippi is interested in removing these obstructions, and it would be more likely to receive the united support of the entire western delegation in Congress than other work that could be selected.

By selecting a work meritorious in all its aspects, and excluding every other object from the bill, we shall test the opinions and sense of justice entertained in different quarters of the Union in respect to the just claims of the West. It is important that this test should be made at an early day, before any committal on our part in respect to the next presidential election. In our opinion, the West has been too often deceived and entrapped by political combinations and platforms to assist in elevating any man to the executive chair who cannot show from the record that he has been the friend and active advocate of western measures. In selecting a President we want a record of his acts, that they may operate as an estopel in case he should be tempted to betray our confidence.

We are not sufficiently acquainted with practical legislation at Washington to know what objections there may be to a bill providing for but one object of improvement; but we do know that it is a just and sound principle of legislating, and commends itself to the honest judgment of the legislator.

We sincerely hope that some man from the West will be found possessing sufficient courage to make the experiment suggested. Bring forward a bill upon the merits of the specific object, and let all who oppose this mode of proceeding be regarded as enemies to the improvement of our rivers, and we are persuaded that its passage will be certain. We shall then be able to present a simple issue to the Executive, and either obtain his sanction or certain information, that we need give ourselves no further trouble upon the subject during his administration.

In every aspect of the subject, we regard the present time as being favorable to the effort proposed. The accumulation of money in the public treasury has become a serious evil, and besides the benefits accruing from public improvements, it would afford important relief to the financial condition of the country were the surplus distributed to productive laborers. Instead of suspending public works under such circumstances, a wise government would prosecute them with more vigor, and seek new objects of improvements, if necessary, to absorb the surplus treasure.

The state of political parties may also be regarded as favorable to western interests, if western men possess sufficient patriotism and wisdom to avail themselves of the opportunity afforded by the apparent disruption of the old organizations to strengthen their own position. We do not propose the formation of a sectional

party in the West: a western party must necessarily be national. But we desire that the people of the western States should look to their own local interests, and study to develop their own resources, instead of yielding to the policy of the East, which tends, under all party changes, to absorb the profits of western labor.

It is folly to decry local parties: they are the result of local attachments and the more immediate social relations—the principal elements of patriotism. Local attachments, and even local prejudices, are to be regarded as a part of man's nature, and though the philanthrophist and statesman may sometimes rise above them, the most that can be expected of states or communities, in the present state of civilization is, that, while aiming to promote their own local interests, they will abstain from acts of injustice to others.

It is manifest that the western States have not been sufficiently watchful in guarding their local interests against the encroaching policy of their eastern neighbors. It is time that they were aroused from their state of supineness. They should, without reference to the strife and prejudices of the southern and northern States bordering on the Atlantic, determine upon a course of policy calculated to promote their own prosperity, and firmly pursue it; admitting of such modifications only as are demanded by the strict principles of justice to sister States.

Western policy should originate with western men, and be based upon western interests. The confusion which now prevails in the ranks of the two great national parties, and the total disruption with which they seem to be threatened, should not be viewed by western men with indifference. If, by adopting certain modifications, the old parties are to be sustained, or, if new parties are to be formed and organized out of the fragments, it is our duty in either event to see that the new organizations contain a fair and just proportion of western elements. The season is favorable for consultation and the interchange of views and opinions among western men. The legislatures of most of the western States are now in session, and we trust they will not allow the time to pass without improvement. Would it not be well for the legislatures of those States bordering on the Mississippi to adopt resolutions expressing their sense of the injustice involved in suspending the improvements of the rapids, and recommending their respective

delegations in Congress to place that work upon its own specific merits.

We are persuaded that the object sought to be obtained is of itself worthy of such an effort; but even if we fail in its attainment, something will have been gained by placing the recorded views and opinions of the western people before the world.

ARTICLE II.

Valley of the Ohio.

BY MANN BUTLER, ESQ.

Continued from page 48, vol. XIII. No. 1.

Grand Cession of the Northwestern Territory by Virginia to the United States—Loughery's Depot—Estill's Defeat after most gallant efforts on both sides—The Renegades, McKee and Girtys—General Combination of Indians against the Kentucky Settlements—Siege of Bryant's Station—Repulse of the Indians—Retreat to the Blue Licks—Counsel of Boone—Rashness of Maj. McGary—Disastrous Battle of the Blue Licks, in 1782—Death of Cols. Todd, Trigg and Major Harland—Relief effected by western hostilities to the eastern frontiers of the United States.

This year is remarkable for the first act of cession from the State of Virginia to the Confederacy, of her wide dominion in the northwest. The subject of this nascent empire in the west seems to have agitated the statesmen of the republic deeply; it actually, without stopping the military movements of the government, suspended the completion of the confederacy for a considerable time. This dissatisfaction, however, under the superintending providence of the Great Ruler of nations, as well as individuals, was most happily for the republic removed by the exalted magnanimity of Virginia. By successive cessions begun in 1781, and consummated in 1st March, 1784, the whole title of Virginia to the territory northwest of the Ohio was, with certain reservations in favor of the inhabitants, her own soldiers, and expenses incurred in the conquest of any part of the said territory, vested in the United States, "for the use and benefit of such of the United States as have become, or shall become, members of the confederation or federal alliance of the said States, Virginia inclusive."* By this

* Land Laws, p. 98. Annals of the West, p. 259.

great act of cession, the whole northwestern or right bank of the Ohio became federal territory or domain of the United States. Ample provision was made for the future division of this territory amounting to 239,345 square miles into distinct republican States and for their admission as members of the federal union, having the same rights of sovereignty, freedom and independence as the other States."* The subsequent measures both civil and military, to which this great cession gave rise, appertain to the history of the right bank of the Ohio valley, to which the attention of the reader is solicited in another part of this work.

The opening of 1782 was marked by several successful enterprises, on the part of the enemy with more than usual fatality to the whites. They were precursors to misfortunes of deeper dye, and more extensive calamity, than had yet befallen our countrymen. Among the former must be ranked Loughery's and Estill's defeats. The former officer descended the Ohio river from Fort Pitt, to join Clark in his second attack upon the Miami Indians, with 607 men. He was attacked below the mouth of the Great Miami, at a creek, which still retains the name of the unfortunate commander, and the whole party was either killed or captured.

In the case of Capt. Estill a deep interest has always been manifested in Kentucky; no less from the high character of Capt. Estill, than the very gallant and chivalric defense he made against an equal party of Wyandots. The author must in this mere general view of the valley painfully repress these personal and local details.† He will only add that Capt. Estill and eight of his men were killed out of a party of about twenty-five. A county called after the name of the gallant commander perpetuates the grateful memory of the commonwealth for his gallantry.

The hostility necessarily incident to the hunter state against the agricultural intruders, as they naturally and justly viewed our people, destroying the game, the principal source of Indian subsistence; circumscribing their hunting grounds, and attacking their towns whenever it was found convenient, could want but little additional excitement to direct their resentments against Kentucky. Yet the passions of the Indians, ever ferocious enough of themselves, are said to have been particularly exasperated at this time,

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* Land Laws, and Dillon, p. 197.

† They are admirably depicted in the communication of Capt. N. Hart, and the opinion of Chief Justice Robertson, in the Appendix.

by certain refugees and traitors, by the names of McKee and the Girtys.*

These were white men, who had abandoned their countrymen about Fort Pitt, and had united with the British and Indians. "Girty, the father, was an emigrant from Ireland, about eighty years ago (1758), if report can be relied on. He left four sons, Thomas, Simon, George and James. The three latter were taken prisoners by the Indians. George was adopted by the Delawares, and continued with them until his death. He became a perfect savage—his manners entirely Indian. He fought in the battles of Kenhawa, Blue Licks and Sandusky; and gained himself much distinction for skill and bravery. In latter years he gave himself up to intemperance, and died drunk on the Miami of the lake.

Simon was adopted by the Senecas, and became as expert a hunter as any of them. In Kentucky and Ohio he sustained the reputation of an unrelenting barbarian. Seventy years ago his name was associated with everything cruel and fiend like. To the women and children in particular nothing was more terrifying than the name of Simon Girty. At the time it was believed that he had fled from justice and sought refuge among the Indians, determined to do his fellow-ceuntrymen all the harm in his power. This impression was an erroneous one. It is true, he joined the Indians after being taken prisoner by them, in their wars with the whites, and he conformed to their usages. This was the education he received; and those who were the foes of his red brethren, were *his* foes. Although trained in all his pursuits as an Indian, it is said to be a fact susceptible of proof, that through his importunities many prisoners were saved from death. His influence was great, and when he chose to be merciful, it was generally in his power to protect the imploring captive. It is due to Simon Girty to record that he saved the life of *Simon Kenton*, who had been an old comrade in Dunmore's war, when the latter had been condemned to death by the Indians.† It was his constant wish that he might breathe his last in battle. His wish was gratified; in the battle of the Thames, in 1814, Girty was cut to pieces by Col. Johnson's mounted men.

James Girty fell into the hands of the Shawnees, who adopted

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* Perkin's Annals, 1st edit., 170, note.

† Life of Kenton, 228, 232, in McDonald's Sketches.

him as a son. As he approached manhood, he became dextrous in all the arts of savage life. To the sanguinary spirit, he added all the vices of the depraved frontiersman with whom he associated. It is represented that he frequently visited Kentucky at the time of its first settlement, when many of the inhabitants felt the effects of his courage and cruelty. Neither age nor sex found mercy at his hand. His delight was in carnage. When unable to walk, in consequence of disease, he laid low with his hatchet captive women and children who came within his reach. Traders who were acquainted with him say, so furious was he, that he would not have turned upon his heel to save a prisoner from the flames. His pleasure was to see new and refined tortures inflicted; and to perfect this gratification, he frequently gave directions. To this barbarian, *James Girty*, are to be attributed many of the cruelties charged on his brother *Simon*. Yet this monster was caressed by Elliott and Proctor in the second war between the United States and Great Britain, which finally extinguished all Indian power on the eastern side of the Mississippi.*

Headed by these renegades, and particularly Simon Girty, on the evening of the 16th August,† 1782, a body of Indians from different tribes extending from the lakes to the Mississippi, suddenly assembled round Bryant's station, to the computed number of 500. This place has been mentioned before, and would be briefly passed over now, but for its connection with the fatal battle of the Blue Licks. This fort was situated on the left of the present road from Lexington to Maysville, in Kentucky, immediately on the southern bank of Elkhorn creek. It contained about forty cabins, placed in parallel lines, connected by strong palisades, and was garrisoned by about forty or fifty men. "It had no supply of water within, but a very fine spring ran from the foot of the point on which it stood near to the bank of Elkhorn, at that place but a small creek.‡ The enemy suddenly showed themselves the next morning, either on the 15th or 16th of August, 1782, when

* Judge Campbell's Writings, quoted by Mr. Perkins, and the Hesperian, September and October, 1838.

† Marshall, 1, 134, says 15th; Boone, 16th, in his letter to the Governor of Virginia; others have it the 14th. Appendix.

‡ Marshall, 1, 134. There was a covered way to this, which may be well remembered, to appreciate the romance of Mr. McClung in his Sketches of this, as other points of western history. Perkin's Annals of the West, 1st Edit. 250, note.

some of the garrison were in the adjacent cornfield, and others absent though not far from the station, with a great deal of the recklessness too characteristic of the times. Some of these in the neighborhood got safely into the fort, while others communicated the alarm to Lexington and other neighboring stations, whence assistance was immediately and gallantly furnished. The place was closely invested for the two ensuing days, as Boone says,* "from about sunrise till about ten o'clock the next day," possibly the 16th and 17th August, 1782, supposing the Indians to have reached the neighborhood of the fort on the 15th, as Marshall says. During this time the Indians kept up a continual fire, by which four men were killed, and three wounded. The enemy made several attempts to fire the numerous cabins with their clap board roofs and weight poles, by shooting lighted arrows at them; and even attempted with more than usual boldness for Indians, to fire the log walls of the fort with torches; but all ineffectually. Yet Marshall says that "nothing could have been more easy, than to have fired the place; as the height of their cabin walls did not exceed twelve feet, and their roofs of boards were fastened on, with cross poles, which afforded lodgments for combustible matter within hand's throw of various parts, to which they could approach, without being seen or exposed to danger."† After sustaining a loss of about thirty warriors, in their various bold, but unskilful attempts, the Indians departed on the morning of the second day, say the 17th of August; but on the fourth day, as related by Marshall, they left their fires burning, and bits of meat on their roasting sticks, which serve in the woods as substitutes for spills and other culinary utensils.

The enemy retired along the great buffalo trace, or road as the hunters termed it, by Ruddle's and Martin's stations; which had been laid waste two years before by Byrd; although this was not the direct course to the Lower Blue Licks. Indeed their retreat showed that there was no wish to conceal their trail, or avoid a battle. On the contrary, every indication had been given so opposite to the cautious and secret tactics of Indians, that they desired an encounter. While the Indians were thus ostentatiously retreating, Col. John Todd, of Lexington, Lieut. Col. Trigg, of

* Letter to Governor of Virginia. App.

† Marshall, 1, 135.

Harrodsburg, and Col. Boone, of Boonesborough, with Majors McGary, Harland and Levi Todd, at the head of about 182 men*, repaired to Bryant's station.

By the 18th of the month the detachments had assembled, and it was concluded to proceed in pursuit of the enemy, without waiting, (as is said by McGary,) for a large reinforcement presumed to be collecting by Col. Ben. Logan, on the south side of the Kentucky river. It immediately struck the more experienced of the party on the march, and particularly the wary, sagacious Boone, that the chopping the trees along the Indian trail showed a willingness on their part, to be pursued; and at the same time the contracting the Indian camp, and using few fires where they stopped to eat, indicated a design to mask their numbers. These circumstances, it was thought, called emphatically for caution; still no Indians were seen until the party reached the southern bank of Licking, at the Lower Blue Licks. This was on the 19th August, 1782. A few of the enemy were then seen by our people in front, leisurely and apparently without any alarm, retreating over the ridge. A halt of our troops was then ordered, and a council of our officers called, to adopt the best plan of operations; whether to attack immediately, or to reconnoiter and wait for reinforcements coming up under a most experienced officer, Col. Logan. Col. Boone delivered his opinion to the officers, much less skilled than himself, that the Indians amounted to three or five hundred warriors, judging from the ambiguous *sign*, which they had made on the road; that the main body must be near and prepared for action. He said that he was particularly acquainted with the ground about the Licks. It is indeed remarkable; too much like the ground of the bloody field of Braddock's defeat. The Licking river, forming an abrupt bend, includes a ridge in the north side passing between two ravines, which extend to the river like the sides of an angle, or the wings of a partridge net. Here, Boone sagaciously conjectured that the Indians had formed an ambuscade, and were lying in wait for them. To counteract the Indian plan, he proposed to divide the Kentuckians into two parties, one to go up the river as high as a small creek called Elk, to cross the river outside of a ravine on the right; the other to occupy the high ground north of the Licks, to be ready to co-operate with the right

* Clark's Papers.

wing, or else to reconnoiter the ground well, before the main body crossed the river. The council were only hesitating between the two plans, when Maj. McGary, in defiance of all subordination, raising the warwhoop, exclaimed, "those who are not cowards follow me; I will show them where the Indians are;" and spurred his horse into the river. The disorderly example was contagious among the fiery and undisciplined spirits assembled here, unchecked by any commanding genius, and the whole body passed the river without order or concert, following the road which McGary kept in front. Parties flocked off as the rough, naked and irregular surface would admit.

It must be noticed, that the ground within the bank of the river was covered with rocks laid bare by the trampling of the buffalo, which resorted to the Licks, and by the washing of the rains; it presented but a few scattering trees. Its desolate exposed condition strikes the traveler with unavoidable gloom, even at this day of advanced improvement, in the surrounding region, everywhere but in this rocky waste. The body of the troops headed by McGary, Harland and McBride formed a broken column corresponding with the ridge previously mentioned parallel with; and between the ravines, which were filled with Indians concealed by a short growth of timber. No sooner had McGary entered the woods, at the head of the ravines, than the action began with great warmth and effect, returned by our men with equal vigor, while they could keep among the trees; but they were soon driven into the naked plain between two fires from the Indians, who doubled them in numbers. Soon the conflict was discovered to be desperate on our side; nearly the whole of the men had fallen, as well as Col. Todd, Majors Trigg, McBride and Harland. The Indians were turning the rear, and rushing upon our men with the tomahawk, when the retreat was commenced. But there was but one point of escape, and that by a narrow ford at the lower part of the bend, (well known to every old traveler on this road), unless by swimming the river. Here all were rushing together, to avoid the horrors of Indian massacre, or captivity scarcely less dreadful. The execution was consequently prodigious in the crowded, disorderly retreat to the river, and in the water, for a battle fought by the pioneers of the west, who in general were as cautious and sparing of the blood of their people, and justly so, as the Indians themselves. In this extremity the unhappy fugitives were greatly assisted by a halt

ordered by one Netherland, who having crossed to the southern side of the river, called to his fellow-soldiers to fire on the Indians and protect the men in the river. The exhortation was regarded by a few, and checked the pursuit of the enemy for a short time. The Indians soon, however, crossing above and below, further flight became inevitable; and it continued for twenty miles without much more loss.

An instance of generous forgetfulness of self took place in this retreat, which ought not, for its intrinsic moral beauty, to be omitted.

It affords relief from the disgusting tale of slaughter and destruction, which occur with such baleful monotony on both sides in these border wars. Still, it is but another picture of the calamities, which have attended the hostilities with barbarians in other ages and countries; but particularly in the marches or frontiers. Scots and English, Welsh and English, the choppows of Turkomans and the forays of feudal times have ever presented the same bloody features as our Indian battles. The great lesson this truth furnishes, ought eternally to admonish the people of these States, against creating the same excitement of the fierce end malevolent passions, which a dissolution of the present glorious union of the States would inevitably minister to their people.

The incident which has reduced the author into this reflection so near his heart, was as follows. Capt. Robert Patterson, exhausted by the fatigue of the retreat and wounds received in former battles, was overtaken by a young man, of the name of Reynolds, on horseback; the latter immediately dismounted, placed Patterson in his saddle, and took his own chance on foot. Patterson escaped, but his generous friend was seized by three or four Indians, who deprived him of his rifle, and left him in charge of one of their companions, while they engaged in further pursuit. The Indian in charge of Reynolds had occasion to stoop, in order to tie his moccasin; when the latter seized the opportunity to snatch the Indian's gun, to knock him down, and seek his own safety, which he happily accomplished.

In reward for this magnanimity, Patterson presented Reynolds with "two hundred acres of first rate land;" a reciprocation of good offices, which has ever constituted the essence of virtue and true excellence of heart.

The loss in this battle was heavier than ever experienced in Ken-

tucky, or indeed in the West, excepting the disastrous defeat of Braddock, which it so much resembled both in battle ground and bloody result. Out of 182 men, who composed this party, 70 were killed, seven taken prisoners, and twelve wounded; the greater part of the Harrodsburg men fell in the front, on the first outset.* The Indian loss was reported from their towns subsequently, as having amounted to 64 killed, and a number wounded, and that four of the white prisoners were massacred to make the loss of their enemies according to their account equal to their own. This destruction, on the part of the Indians, is much to be doubted from the general fate of our encounters with our red enemies. Numbers, however, unfeeling as the remark may seem, are by no means the same criterion of loss, in an agricultural state of society, and its hunter condition. A mortality, which is rapidly replaced by the superior rate of civilized increase; would be fatal to the continuance of savage society. Yet what a triumph is this, that we can afford to *kill down* our adversaries! It converts our superiority into one of *population*, rather than of *arms*—we *breed* faster, than the Indians; and it seems, indeed, the very root of the superiority of civilized, over savage society; but it is well calculated to moderate our boasting over the rude warriors of the forest. True it is, that the plenty produced by an agricultural state of society affords the cradle for nursing the arts, the morals and literature, which at once compel the defence and the happiness of civilized life. Among the victims of this sad field, Col. John Todd and Maj. Stepen Trigg were particularly deplored for their eminent social and private worth, distinguished intelligence and urbanity of manners: qualities which are inestimable as public models and guides to society, in a forming state, like the nascent Commonwealth of Kentucky. Of Maj. Harland, it is affectingly said by Marshall, "no officer was more brave, or one more beloved in the field."† "The deaths of these men were a real public calamity, of more than common measure." Col. Boone, too, came in for his share of the misfortunes of this unhappy day, which his advice might have obviated; he "here lost his second son and very narrowly escaped with his own life." The Revd. Mr. Peck, the ablest of the pioneer biographers, not excepting Boone himself,

* Compare Boone's Letter to Gov. Harrison, in App., with Marshall, I, 141.

† Marshall I, 142.

says, "that the death of his son and the disasters of this day were never effaced from the mind of the old pioneer. Nearly forty years, after the sad event, he could not rehearse the story without tears. While on the retreat with his son, a very large Indian sprang towards him with uplifted tomahawk, and when but a few feet distant, received the contents of the Colonel's gun in his body.*

It is due to the memory of Major McGary, (who was a man of courage almost too fierce for Indian battle, much more for civil society,) to state that he is said to have counselled a delay at Bryant's station for twenty-four hours, until Logan could arrive with his powerful reinforcement. This was rather tauntingly rejected by Col. Todd, as is alledged; who possibly with the honorable ambition of a brave man wished to distinguish himself against the mortal enemy, who rarely showed himself in such numbers, and not to lose the opportunity to signalize himself, by the arrival of his senior colonel.† McGary unhappily resented this treatment too fiercely; and in a spirit of lamentable revenge, determined then, to force a battle, at the hazard of any consequences to his fellow-soldiers and his country.‡

This terrible scene of bloodshed and massacre in their most horrid forms suggests a reflection, which may alleviate some of its horrors; it is that it diverted a formidable body of Indian warriors from the more settled frontiers of the United States, where they might have perpetrated tenfold more destruction, than in the sparsely stationed or forted forests of Kentucky. This is a diversion of the auxiliary force of the British, not always considered, in estimating the gallant daring of the pioneers of the west.

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* Spark's Am. Biography, XXIII, New Series XIII, 127.

† Idem, 119.

‡ The author has seen a vindication of McGary written by himself addressed to Gen. Clark in the papers of the latter, confirming these views. They likewise met with the concurrence of the late Gen. Ray, a step son, however, of McGary.

ARTICLE III.

From the U. S. Mining Journal.

The Igneous Theory, and the Earth's Natural Laws.

A correspondent of the London *Mining Journal* has been discussing at considerable length, the *vexatio questio* of the Origin of the Earth's formations, and in opposition to the Igneous Theory, has attempted to show that the Earth is producing its stratification and mineral veins by crystallization, under its present natural working laws; his arguments are exceedingly ingenious and deserving attention. He says:

"Theoretical writers have deluged us with works attempting to show that the earth is, or was, based on fiery masses, which caused it to burst in thousands, and throw up all its mountains; and they are so conversant with its present crust as to be able to point out the primitive from the secondary formations. It is this supposed interior heat they take for their ground work to account for all the different angles of stratification and sudden contortions.—They also tell us that our lodes are only cracks caused by interior combustion, and have since been filled by metallic substances, sent forth from its interior fusion, or by sedimentary deposits, though on these points they are not agreed.

"I will not attempt to follow them, soaring to celestial worlds, or even in descending to analyse the abyss of the great deep, which they appear to have so ably fathomed, but content myself by asking them what God, in his all-wise creation, left as a dead block for an everlasting memorial as a guide to posterity? Do they pretend to tell us that the earth is such, or that a single layer in the earth is stationary? Most of us are aware of the beautiful working system of man and beast, the fowls of the air, and the fishes of the sea, with the tree and all vegetation. We have long since discovered it all has working laws starting from a fulcrum, such as the heart of man, from which the leading veins spring, and is constantly branching off untill it gets to the extremities, where it is only protected by the skin. Through these veins there is a constant circulation to keep up animation, and it progresses on until it reaches the meridian of glory, when the scale turns, and it recedes until its vital energy ceases to work, when it again returns to its mother earth. The whole of the living creation and vegetation are nothing more than the earth's productions, and only exist for its season. They are but figurative emblems of the beautiful laws of the earth; then who can set her down as having a dead crust, enveloping a fiery mass, when she is known to be undergoing continual changes? In fact, she is a perpetual motion. Then look at her bounteous nature. Could she work without a fulcrum, from which her leading veins sprang the mo-

ment she was called into existence? They come forth through her various and new formations progressively, extending just as the veins extend from a child to a man, and through them the gases, waters, and electric currents pass. They are the life strings of the earth, acting through all its masses of animated matter. I again say there is not a layer in the earth in the same position as it was when first formed. They live for their season, and die to become food for the young in succession, like all creation.

"To my view, it is absurd to talk of the earth ever passing through these fiery ordeals; can we for a moment suppose God to have become wroth with his creation, and abandoned it to such a terrific element until it became a wreck of nature, when it again settled down and assumed its present beautiful working law. I believe the earth's heat to be nothing more than is required in every living thing, just sufficient to keep up the working system, and it is the same now as it ever was from the beginning. The old layers die and new ones form. It is chemical action in watery solutions, producing masses of crystallization; they collect from affinity, and form new layers. We are further told that the primitive rocks are granite. I am not satisfied on that point; granite is not plentiful, it only abounds in certain districts. It is about the lowest layer of rock that man has ever seen. It is but vague evidence as to the whole formation below being granite.

"If we could penetrate ten miles into the earth's crust, who would presume to say we should there see granite. Nearly all the fast crystallising rocks form beds or layers, and carry up mountains, and are too often termed granite, but we see also the lodes keep pace with these mountains; they are found at the very summit. It matters not what the new layers are, the lodes progress precisely as the veins do in the flesh, from the growth of a child until it becomes a man, and, like them, are only covered with a skin of alluvial soil. Every different layer is produced by amalgamation of substances that chemically combine; the softest formations often become the hardest rock. Great stress is laid by our geologists as to rocks being primitive that contain no fossil remains; which I contend is no guide, as none of the deeper layers could possibly contain fossils. Fossils are principally the remains of once living animals, that move on or near the earth's surface; when death overtakes them, or through some accident, they become imbedded in the earth to the depth of a few inches, or even a few feet, where crystallization is still going on, and a new layer forming about them, and as that one is forming others below are daily decaying. The new red sandstone is a new layer forming; its particles are nearly all of the same form; it is a mass of crystalline white quartz, turned red and cemented together by the oxide of iron daily coming up from the stratifications. I can point out where regular lodes of solid iron are coming up through

it. The direction of the layers or apparent contortions are dependent on the acting crystalline current, and not to interior fires.

"If we suppose a new layer formed a 1000 feet thick, all intermixed with fossils, this layer would only live its season; when decaying, its contents would be passing into some other layer, that had more recently commenced crystallizing or growing—the former becomes food for the latter. The fossils having from affinity imbibed certain mineral substances, causing them to take a more durable character than the rock they are imbedded in. As the bed decays the fossils come together, forming all but a layer of fossils; many such layers I can point out where the adjoining layers of more recent growth have not a fossil in them. Even these fossils are, like every other thing, although more durable than the layer they are imbedded in, they decay in time, and will never be found in deep layers or interior formations; whatever layer they are found in was once a surface formation, and the layer has not yet decayed—but it will, and as the time rolls on, and layers die, they must become extinct. For fossils we are dependent on new surface formations. All uneveness in layers, and what is generally supposed to be the wrecks of Nature, is nothing more than, I before stated, the productions of the working current of crystallization.

"The layers, or channels, commonly called volcanic rocks, are only a species of elvan; they are often found running in an east and west direction, and dipping as a lode; at other times in alternate layers with slate or other rocks. When in contact with lodes they often cause them to be productive: they grow from crystallization, as lodes and strata do, and are useful in their places. All rocks when forming, no matter what the mixture is, each kind, from affinity, have a tendency to collect together; thus we may see many substances in one layer, each endeavoring to unite in its own crystal. When two happen to amalgamate, it may be termed hybridous. Granite is a rock of this character, and as is that commonly called volcanic.

"After forty-five years' practice, and the most careful observation and investigations when excavating mines, and removing different stratifications of rocks, I cannot discover anything to indicate the earth's ever undergoing these supposed eruptions or convulsions by fire, as traditionally handed down to us, and even attempted to be borne out by the geologists of the present day, further than the gold, tin, wolfram, and a few other ores, with the debris of hills, having been washed down in the valleys, which is only the work of a deluge—an overflow of water, which certainly presents some very mysterious features, not easily accounted for.

"We see animals that fed on plants that grow only in tropical regions, now frozen up at the poles, with the tropical plants undigested in the stomach—a work of only a few hours. Then, I ask to what conclusion can we come on this subject, further than

this was only the work of a moment—an instantaneous change from heat to cold? Tradition says that the sun has changed its place in the firmament repeatedly. This is beyond our comprehension.

"It is far more likely that the earth, through some unknown means, by the working of the planetary system, upset its balance, or reversed its axis, when a great rush of water would take place. The stratum then, being soft, would be washed away, and valleys formed. The gold, tin, and other ponderous substances, then near the surface, from specific gravity, would deposite in them. We want no confirmation as to a rush of water having taken place, which laid open our abrupt cliffs and mountain sides, depositing the tin, &c., in the valleys.

"Many have come to the conclusion that the upper layers of rock are sedimentary formations.—Then I ask for a single precedent of a washed down tin layer, ever being found below the alluvial soil with new formed rocks on it. We often find deep sediments on it, but showing no indication of becoming a dense layer of rock, it barely indicates a conglomerate; neither do I believe sediment ever became rock. I am aware it will be argued that trees and fossils are found to a great depth imbedded in rocks; but these are in crystalline rocks that pass upwards, and are not sedimentary deposits.

"The gold, the tin, the tree, or even the "elk's horn," though in a good state of preservation, is not found in Cornwall imbedded in a rock. A casual shell may be found; but if these rocks were carefully examined, they would be found to be only mere patches of crystalline rock, and not of the character of the rocks in the vales where tin is found. It is not unlikely these patches were formed thousands of years before the Deluge.

I would next call attention to the different layers of crystalline rocks, noticing lime, quartz, sandstone and slate, with many others. These rocks, when crystallizing and forming beds or layers, accumulate chiefly on the upper side, imbedding fossils. The granite tribe is accumulating principally on the under side—that is, in new forming layers, and they are rising upwards, carrying gold, tin, trees and fossils with it. I have seen good streams of tin on granite so soft as not to bear persons to walk on it. This is often called decomposing granite; I believe it to be a layer of new forming granite that has carried the tin in many instances one hundred feet above its original level. No fossils will be found in these layers. When they were boring off Padstow Point, to ascertain the nature of the rock below the sand, it was found that a layer of blue tenacious clay between the sand and slate rock, which I have no doubt is a new slate layer, forming from a substance coming up from below, and not unlikely to contain fossils. All the lime tribes are fast growers and preservers of fossils, accumulating

chiefly on the upper side, which accounts for their productiveness of fossils.

Coal is said to have been once trees, or some vegetable substance, but it is as much a rock as any in the earth, it has cross heads, cleavage, and faults, and is only to be found in its own native soil. The quantity and quality is dependent on the contents of the adjoining strata; these beds only live their season, as all other rocks do. Having before hinted as to my views of the analogy between the working system of the earth and man, I will here endeavour to give a further explanation on this point. We know man is a complete piece of mechanism; he must have arteries, veins, and ligaments to perform their rounds of duty. May not the earth require the same? We have undeniable evidence of the earth containing three distinct classes of veins or lodes, probably more.

We find one class, which may be termed the mineral-bearing, and which is composed of quartz, iron, mica, lime, arsenic, sulphur, and other mineral substances. A second class is composed of tenacious clay, in which ore is seldom found to a great extent: these are termed flookans, or slide lodes. A third class is the elvan, which is a hard, dense lode, containing quartz in small crystals, often mixed with hornblende, lime or felsupar; they are seldom porous, but little water passing through them, and contain little or no mineral substances to value, although they are generally thought to have a tendency to cause mineral bearing lodes to be more productive when in contact. Then we have, also, the stratifications dipping into the earth, and in nearly every case crossing the lodes.

We see the earth hourly pouring forth her bounteous supplies, to keep up animation, which must all return to her again in rotation. Then, how she fed? Through what source? Is it through the stratifications or lodes, or may it be at the pole or poles?

I am not skilled enough in anatomy to know what lodes may act to the earth as arteries, veins, or ligaments. I am certain that, so far as man ever penetrated the earth, in mineral veins he will still find the waters, minerals, and gaseous current, coming upwards: and one thing more is clear to me, which is—that the clay veins, no matter in what direction they run, are the railroads of the earth. They allow each portion to expand or contract, as may be required, for the growth or decay of layers or beds, which is the natural cause of faults or heaves on more dense lodes, and particularly the east and west ones.

This is a subject, I believe, but little studied, even by the practicals, as I find but few aware as to the position of lodes in the earth. I think that geological societies allow the north and south lodes to be the master ones, and have laid it down as a law that their average dip or underlie is about the angle of $22\frac{1}{2}$ degrees east or west. It may be said that we find lodes dipping at every

angle—this is only caused by lodes splitting or branching off as they near the surface. We often see many lodes of nearly the same character in a mine, and dipping the same way, though at different angles; if we particularly notice them, it will be found that they are all coming to a point in depth. If they are distinct lodes, in nearly every case they can be detected when laid open.

Whatever the interior strata of this globe may be, it is clear, from the known law of lodes going into the earth, that there is something far more systematic in its working than is generally supposed; and when we contemplate the working system of man, and the beauty of creation, we have every reason to come to the conclusion that God, in his wonderful works, left this globe the living type of mechanism, composed of different portions of matter, to which we can neither add nor diminish; and whether the average dip of North and South lodes is 22½ degrees, or even ranging up to 45, it would not alter the law—it only leaves a larger space or centre for the laboratory of Nature; either would show that these lodes or veins are the working sources of the earth, renewing and reproducing every thing over and over for ever, for the support of man and all creation—through them, everything requisite is brought to or near the surface, within the reach of man.

It would be absurd to suppose that God created a world composed of everything necessary to make it a complete piece of mechanism; and after some 8,000 or 10,000 years it is found that man had dug up all the gold and other metals, with all the coals and mineral substances; when the then existing creation would suddenly find themselves deprived of all these most essential parts of the earth's formations. This is not likely to happen, as it all returns to the earth to be reproduced, certainly not in the same situation, but it may again form in others far more convenient. If we suppose that the miners of Cornwall had dug out all the copper on the backs of the Cornish lodes, that will not deprive the world of copper; new formations will be found, or these lodes may be compared to a tree maimed in the upper shoots, when fresh branches will spring from below and again bear its fruit. It must be borne in mind, that if damaged lodes do not shoot out side or parallel branches, they may cause ores to accumulate some 50, 100 or even 500 miles distant.

Man has dug iron from the earth as long as we have a record of his existence, still we have no deficiency of supply, neither are we overstocked, and who will deny that the iron used by the ancients is not again in the earth, and even in our present lodes. It was thought that the ancients had deprived us of the great deposits of gold, but see the discoveries of the present age: yet we can not keet it; the bulk of it will return from whence it came. In no age will the earth refuse to yield her supplies. Man at times may be negligent and deficient through want of perseverance,

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which is the moving power. The caverns found in lime rock are nothing more than ventilating passages for water and gases produced in the earth. It is to be compared to air placed under water: in its passing up it would form cavities, but when the air ceases, the water, from its fluid nature, closes; but the earth's gases and waters are a continual source that flow, and must and will have vent, though I believe it to be like the fishes in the sea, or animal and vegetable creation; the former, though immersed in a fluid of immense weight, neither see it or feel its effect. The animals and vegetables, immersed in an atmosphere are precisely the same; the only effect is, when a strong wind blows they meet resistance. It is the same with fish in strong currents of rivers or tides. Gases and water meet the same resistance in the earth; when passing through rapid crystallizing layers they have to struggle hard. These checks are often visible to man. Hence, we see everything working under the same law, whether it be animals, vegetables, crystalline rocks, lodes, or deposits of ore. They come to perfection agreeable to the congeniality of the elements they are in.

I would further notice that every ponderous substance is carried uppermost; see gold, tin, lead, antimony, iron, &c., and even the fruits of vegetation. The acorn and the grain of wheat will send a thousand per cent. upwards. Copper, being one of the lightest ores, is often found deepest; it is on these grounds that I oppose deep sinking in search of productive mines, and ask for precedents. Even the extraordinary paying copper mines show extra gossan at shallow levels, or produce the ore within 40 fms. of the surface, and all other productive mines do it long before they attain that depth. The larger the deposite of ore, the deeper the ore is likely to continue. A casual bunch of ore might be first found at an intersection of 100 fms. deep, but show me precedents as to their being over remunerative. I believe the heart of large bunches of ore is obtained in nearly every case before reaching the 150 fm. level, and are all but extinct when they reach 300 fms.; this depends much on the bulk and age. The law of lodes requires watchfulness and study, far more than the working system of man. Lodes may be found in every grade of life, the young, the middle aged, and the time worn. As they near the surface they are to be compared to the veins in the arms of a man, branching into the fingers, and for deposits of ore dependent on the stratifications, directions, and intersections, which bring the interior magnetic current to act on one point, producing powerful chemical action.

I believe all our lodes contain ore of some kind in their season, which is mainly dependent on their age and adjoining stratifications. They are tender and gossany in early days, bear their fruit in middle age (the ore), decompose when old, and the gossan becomes hard capel; these changes are dependent on the acting current which causes the growth or decay of the adjoining stratum.

I beg, in continuance, to notice that mineral crystals are as flowers on trees, and chiefly found in young lodes near the surface. In most every case the ore is then of good quality; at middle age, it is in greater quantities, but not equal in quality, with the exception of about the heart of the bunch. In old lodes, the ore is passing off in solution, reducing in quality and quantity, often depositing native copper, when in contact with any layer containing magnetic iron. Ores, when depositing in lodes, from their own chemical action, decompose the sides in the most congenial places, making room for their deposits; hence we see swells in lodes where there are large bunches of ore.

In decaying lodes, we often see in vaughs, or caverns, the prints of cubes and other crystals that were once there, but now decomposed and gone; this shows the matrix to be more durable than these crystals of ore.

As a proof of the crystallization of rocks, I may remark that I have seen thousands of six sided quartz, formed on the sides of levels, after they had been excavated; and once in a level that I assisted to drive through, a large quartz lode; and on re-opening it after the expiration of six years thousands of quartz crystals had grown, 2 in. long, and as large as straws. On rubbing them between the hands, they again became a liquid. I have no doubt but hundreds of old practicals have noticed quartz growing, as I have often pointed them out to mine agents in my rounds.

Carbonates of lead will grow in strong lead lodes 1 inch long in 12 months. I have seen a stone taken from a strong lode, productive of carbonates of lead, when brought to the surface, and kept in a damp place, shoot out white carbonates, as branches will for a season from a detached piece of green wood. Many specimens of young crystallizing rocks could be detected in the short space of 7 years, if carefully looked for.

I saw in Treburget United, not two years since, hundreds of shales of carbonate of iron adhering to the sides, and even to a piece of wood floating on the water; this mine has not been opened above 7 years. We are told that native silver has been found in mines adhering to timber, and crystals of tin to leather. We have also the members of the Cornish Geological Society's authority to say the elk's horn has become the oxide of tin; and the horn is in their possession, and is open to inspection. The horn lay imbedded in the alluvial tin layer, previously washed down from the mountains, where the tin lay slowly dissolving, as all substances do, when in solution and passing on, it came in contact with the horn, when the lime caused a chemical action, and it dissolved, and gave place to the oxide of tin, where I am told it has taken the form of crystals of lime. Here is a double action, as there can be no doubt of its first passing in solution through the lode, where it crystallized, and become an oxide of tin before the Deluge, when it was washed into the valley; it there

again slowly dissolved, and passed off in solution, and, re-formed in the elk's horn, again producing the oxide of tin.

Any person by calling on Mr. J. T. Tregellas, of Truro, may see with him a lot of crystals said to be felspar, but they are not unlikely to contain a large portion of lime: many will be found of their original substance, and others all oxide of tin—some a quarter, others half; in fact, they are in every grade, proving their first passing into a solution and re-crystallizing, a transition of substances.

At Rinsey Mine a transition of iron is taking place, and the granite alongside the lode is becoming iron. Hundreds of other proofs could be produced, if required, of the solution, transition, and re-crystallization, of mineral substances; had we only these proofs, it would have been sufficient to show that rocks live and die, and are re-produced by crystallization; and at low temperature native copper is produced in 12 hours, when no man can detect a warmth in the water: heat may have a tendency to produce it quicker, but it is only like a hot bed—it is forced, and is not produced in its native element. In fact, the whole of the mineral crystals are living proofs of the capability of rocks to form by crystallization; and the earth is still performing and showing its beautiful working law every day, and producing the crystals within 10 fathoms of the surface, without a heat preceptible to man, even when he is alongside of them. Next, look at the stratifications; if ever so dense, and there happen to be a vacancy, commonly called a vaugh, or cavern, in it will be found the natural crystals of that layer or bed of rock, brought up to perfection. Look at the Cornish quartz, more commonly called the Cornish diamond, found in Tintagel Cliffs, in vaughs imbedded in a black, sooty substance. We also see able chemists, if they will allow me the term, using their hot-beds to produce crystals from mineral salts. I think these are ample proofs that all our rocks are, and ever were, produced from crystallizations, requiring no further heat than the rocks of Cornwall now contain to produce every substance therein found.

Can any one for a moment suppose that the large cubes of sulphuret of iron, or mundic, so often found, were formed as now found, when God said, "Let there be a world," or that, at any later period they sprang into existence in the twinkling of an eye? It is a work of time—it lives and dies.

It would be highly absurd to say that all the gold found in Australia was formed in nuggets, as now found, when the world was created. It is said by some that it exists only in its metallic state. I contend that gold is like all other ores—continually passing through the earth in solution; and when the seed is sown in congenial ground, there it will collect and form a body; and every other ore collects in the same way. It may be compared to the oak of the forest—one of the longest livers when formed. I

am not aware that any man can detect these ores by the eye in their primitive state, when passing on in solution through rocks, or through waters, or in passing off to the atmosphere in gas. Still, it unites and forms a body when in its own element, and met by a relieving flux, just as copper when met by metalic iron, or the tin when met by the lime in the elk's horn, and without any perceptible heat; though it is rather difficult to come to a conclusion as to how ores accumulate—whether condensed from gases, and formed on the outside of crystals; or whether, like the tree, it inhales its supplies from the rocks through which lodes pass.

Judging from what I have seen of the carbonates of lead shooting from a stone, detached, and deposited in a damp placé on the surface, and the needles of antimony, also thousands of quartz crystals seen shooting out from the sides of levels driven in apparently clay or slate rock, I am inclined to think it much like a tree, first springing from the seed, when it draws its supplies from the lode and adjoining rocks, until it reaches its climax.

Nature clothed everything with its own working law, which carries it to perfection; but these are things which require watchfulness and study, and will not be detected until the most able of the young practicals become chemists, and employ their leisure hours in their own laboratory.

Ores in their primitive state are the acids or salts of the earth. They are passing through all lodes and stratifications in which they are found deposited, and no doubt, could be detected by the able chemist. This is the field for cultivation, to develope the natural and true laws of minerals. After these remarks, it would be a waste of time to follow further the interesting work of crystallization.

I will next endeavor to show that the different ores of Cornwall are the productions of different eras. The oxide of tin, wolfram, and a few other substances, with a small portion of gold, was to perfection long before the Deluge took place, and by it was brought down into the valleys; but we see little or no copper, though we are often told that the ancients did not know copper, and where they came to it they abandoned the mine, or threw it away to build hedges and make roads. I have myself seen hundreds of places opened that were never worked since the days of the Druids or Romans, but I never saw one left by them worth working for copper. As to its being used to make roads or hedges, I never saw a single instance of it left from the ancients, but I see too much put for that purpose in the present day. If I was to offer 10*l* for the man that could prove he ever profited 100*l* for copper found in hedges or roads of 500 years standing, I think there would be no claimant. I firmly believe our lodes contained little or no copper when first worked for tin; it is of far more recent

growth. We can now find copper in a thousand lodes in Cornwall and Devon, ranging within from 2 to 20 fathoms of the surface. It is a singular thing, if copper then existed, that the ancients, after opening extensively on every side, should never have laid open a good copper mine.

To be continued.

ARTICLE IV.

The Cotton Trade.

By C. F. McCAY, Professor in the College of South Carolina.*

The events of the past year have shown the utter insignificance of Russia as a commercial power. With all her ports blockaded on the Baltic, the White and the Black seas, the prices of merchandise have been scarcely disturbed. The demand for cotton, that great barometer of Commerce, has been undiminished. Though the peace of Germany, Sweden, Greece, and Italy had been threatened, no falling off in the English exports has been experienced. All the operations of Commerce move on undisturbed, just as they did in our war with Mexico. The price of hemp, tallow, sheet-iron, and a few unimportant articles, has been affected, but no great important interest in the commercial world has been seriously injured.

The consumption of cotton has, indeed, slightly declined in England, France, and on the continent; but so small is this decline, that it is fully explained by other causes well known and understood. The deliveries to the trade at Liverpool have only fallen off from 1,430,000 bales to 1,424,000 bales, up to the 7th of October. At Havre, the consumption was 27,000 bales less than it had been in 1853 at the end of the first half of the year, but part of this loss has since been regained; the exports from the United States and England to the continent of Europe have decreased more than either of these amounts; but this decrease is not over 100,000 bales.

If war, the deficient harvests in England, France, and Germany, and the consequent high prices of provisions, be considered, the wonder is that the decline in the consumption of cotton has not been larger from this cause alone than has been really experienced.

Russia may be a great country in territory, or population, or agricultural resources, but as a commercial power she is utterly insignificant.

The events of the past year have also shown the immense benefits which have already been received from the mines of California and Australia, and go far to establish the fact that a sensible appreciation in prices is already observable, from the large supply of the precious metals.

In former wars, the extra demand for specie for the military chests of the armies disturbed very much the currency of the war-making powers, and while it depreciated property generally, raised the price

* From Hunt's Merchants' Magazine.

of wheat and flour and other articles of this kind. The present war though not less expensive, has hardly been felt in the monetary world. The extra expenditures of England have exceeded fifty millions of dollars; of France, about the same; of Austria, a large sum; and both Russia and Turkey have had heavy outlays of an extraordinary character. Amidst all, the price of English consols has not fallen over five or six per cent, the circulation of the Bank of England has not materially declined, the specie in her vaults has decreased only four millions sterling, and the demand for money has not largely increased either in Europe or America.

The rate of interest was, indeed, raised considerably in England, but this was due mainly to their deficient harvests. The stringency in their money market produced its effect in the United States, on account of our close connection with Liverpool and London, and of our large over-trading and borrowing in the preceding year.

The extra demand for coin for the support of distant, large, and expensive armies, has thus had but a slight influence on Commerce, and this can only be explained by the large supply of gold from the new fields which America and Australia have opened to the world.

The two facts that have now been referred to are of great importance in considering the demand and supply of cotton. If Russia is of small influence as a commercial power, the slight decline in the consumption of cotton during the past year is not due to the war; and if the extraordinary supply of the precious metals suffices to meet the extra demands made by distant and expensive armies, the fair and steady prides we have received for our exports have been due to the regular and legitimate demands of trade to meet the actual wants of the world. And if the war only affects, in the slightest degree, both the demand and the rate for cotton, our expectations for the coming year may be based on the usual circumstances that have heretofore influenced the consumption and the price of cotton.

In the United States, the purchases made by the Northern manufacturers have declined in 1854, if we compare them with 1853. This falling off is over 60,000 bales. But the amounts used by the factories have not probably been much less than during the preceding year. The tightness in our money market this summer compared with last, has made the Northern manufacturers lay in but small supplies, so that the stocks in their hands are very low. The prosperity, North and South, of all branches of the cotton manufacture, forbids the belief that the wants of 1855 will decline.

The average consumption for the three years ended				1845, were...bales	354,000
"	"	"	"	1848, ...	461,000
"	"	"	"	1851, ...	469,000
"	"	"	"	1854, ...	628,000

650,000 bales will be needed for 1855, against 611,000 and 671,000 for the last two years.

The deliveries to the trade at Liverpool, which constitute over 95 per cent of the English consumption, have suffered no decline for the present year. In the earlier part of the season they were less than in 1853, but this loss has been entirely recovered.

On the 30th of June these deliveries were 904,000 bales, against 989,000 of the year before. During the months of July and August

this deficiency remained about the same. On the 14th of July it was 90,000 bales; on the 18th of August, 86,000; and on the 25th, 89,000 bales. About this time the favorable influence of the fine harvests began to be felt, and the deficiency has lessened every week since. On the 9th of September it was 58,000 bales; on the 23d, 37,000; and on the 30th, only 20,000 bales. On the 13th of October the consumption for 1854 was 1,456,600 bales, against 1,460,000 for 1853, exhibiting a decrease of only 4,000 bales. For the whole year we may expect no decline, and as the consumption of 1853 was 1,904,000, against 1,861,000 bales of 1852, the amount for 1854 will be above rather than below 1,900,000.

For 1855, even supposing the war to continue, we may anticipate an increase. The favorable harvests in England and on every part of the continent, and the moderate prices which are likely to prevail, will increase the demand for cotton goods. The prosperity of the agricultural interest, as well as every department of manufactures, will exert a favorable influence. In every part of the world, excepting only the United States and China, the demand for the English exports will be large, and in these two countries only a slight check will be experienced. The scarcity of money, the uncertainties connected with the war, the hasitating and undecided position of the German States, will be drawbacks on the other side; but, taking both into consideration, we may reckon the wants of Great Britain as not less than two millions of bales for 1855.

For France the consumption for the coming year will be as large as in any former year. The slight check it has received during the past season has been owing to the high prices of food. And though these will not be low in the coming year, because the supplies of the last crop have been entirely exhausted, and because the war will interfere with the usual receipts from the Baltic and the Black Sea, for 1854, the exports of American cotton to France have been 374,000 bales against 427,000 for 1853; and though both these are larger than for 1852 and 1851, the universal prosperity of France since the accession of Louis Napoleon to the Imperial throne, authorizes us to base our expectations for the coming year on the past two, rather than on the preceding results. For 1855 the demand for American cotton in France must therefore exceed 400,000 bales.

On the continent there has been a decline, in consequence of the war and the deficient harvest. Part of this will be recovered, but a deficiency in our exports to the north of Europe will still exist. Russia is, indeed, of small importance, still she wants some of our cotton. The decline in the English outgoings has been greater than ours, because nearly all the Russian imports were received from England, and not from the United States. To the whole continent, omitting France, our exports have fallen off 23,000 bales, while from Liverpool alone they have gone down from 223,000 to 156,000 bales. As the amounts for the whole year were 350,000 bales from the whole of Great Britain, the deficiency for 1854 will be fully 100,000 bales. The continental supplies exported from America and England during the year 1852 were 636,000 bales; for 1853 they were 715,000 bales, and for 1854 about 590,000 bales. For 1855 the moderate

prices and abundant harvests will probably make up half this loss, and thus raise the demand to 650,000 bales.

These several estimates for the coming year make a total demand for 1855 of 3,700,000 bales against 3,475,000 for 1854, and 3,717,000 for 1853, as in the following table :—

	Consumption.	Estimate.	
	1853.	1854.	1855.
Great Britain ..... bales	1,904,000	1,900,000	2,000,000
United States	671,000	611,000	650,000
France, of United States cotton	427.000	374,000	400,000
The continent, of U. S. and East India cotton	715,000	590,000	650,000
Total	3,717,000	3,475,000	3,700,000

The supplies for 1854 from the East Indies have fallen off largely from 1853. They were indeed excessively large in that year, compared with former years, having reached 485,000 bales, on account of the good price of cotton and the civil war in China. In Liverpool, on the 14th of October, the decline had reached 68,000 bales, and for the whole year the deficiency at London and Liverpool may reach 130,000 bales. But even with this falling off, the imports from the East Indies will exceed the amount of any former year. The average receipts from 1848 and 1849 were 205,000 bales ; for 1850 and 1851 they were 318,000, and for 1852 and 1853 they were 354,000 bales. The probable troubles at Canton, on acconnt of the Chinese rebellion, by lessening the demand in that part of the world, will tend to divert the Indian cotton to Europe ; but this effect will be counteracted by the moderate prices, and the English receipts will not probably vary much from 350,000 bales.

The English imports from Brazil and the West Indies are small and stationary. They have been between 100,000 and 200,000 bales for every year of the past seven. The receipts at Liverpool, up to October 14, were 65,000 bales against 63,000 of the preceding year ; and as the total for 1853 was 141,500, the amount for 1854 will not exceed 150,000 bales. The average for the last five years has been 152,000 bales, and for 1855 this average may be anticipated.

In Egyptian cotton the average for the last three years has been 121,000 bales. For 1853 it was 105,000. For the present year there has been an increase of 24,000 bales, making the probable amount for 1854 as high as 130,000 bales. This limit will not probably be reached for the coming year, on account of the war. This has interfered with the planting and gathering of the present crop, and, therefore, with the expected receipts for 1855. From Egypt, and Brazil, and the West Indies, the supplies for the coming year will not probably reach 250,000 bales, against 245,000 for 1853, and 347,000 for 1852.

The crop of the United States exhibits a decrease for 1854 of 333,000, compared with the preceding year. Part, but not all, of this decline will be recovered in 1855. From South Carolina a considerable increase is expected. The excessive drought of 1853 did more injury than the one we have this year experienced. The late frosts in April interfered with the early growth of the plant, but the beautiful weather in May and June fully made up for the backward spring. The drought of July and August was relieved by the partial

showers, which have given to many planters most excellent crops. The lowlands and bottoms have produced very well. The storm on the 8th of September destroyed not a little by blowing it off the stalk, as a large amount was open in the fields, under the influence of the hot unclouded sun of August. The deficiency on the poor uplands, though not so great as last year, will be considerable. Yet, as the killing frost has come very late, every boll that could come to maturity has opened, and the weather for the whole of October did not interrupt the picking a single day. From South Carolina an increase of 10 or 15 per cent may be expected. From Georgia the prospects are not so favorable. The drought was more severe and protracted. The excessive heat of July and August made the atmosphere drier than it would otherwise have been, and the ferms fell from the stalks very largely. On the rich wet lands production has increased, and on some favored spots in the uplands fine fields may be seen. But generally the crop is short, though not so much so as it was last year. The shipments from Columbus and South-western Georgia to Savannah will be increased by the extension of the railroads in that direction. The receipts at Savannah will thus probably be higher than last year, though the increase will be small. From Florida the promise of good crops is very general, and an increase may be expected, notwithstanding the extension of the South-western Railroad to Americus. In eastern Alabama the drought has been very severe, but on the prairie lands, and on the Tombigbee and the Tuscaloosa, the gain will more than balance the loss on the Alabama River. At New Orleans, and throughout the Mississippi Valley, the storm on the 22d of September was long continued, and very disastrous. The drought and heat which injured the Atlantic States did much damage on the uplands. But so numerous are the rivers, so wide the bottoms, so late the frost, that the favorable influences much exceed the adverse. From Texas the reports of a fair crop are uniform and invariable, the drought having done no damage on the Gulf. From the whole United States the crop may be estimated at 3,200,000 bales, as follows:—

	Receipts.		Estimate.
	1853.	1854.	1855.
Texas.....bales	86,000	110,000	120,000
New Orleans	1,581,000	1,347,000	1,500,000
Mobile	545,000	539,000	550,000
Florida	179,000	155,000	160,000
Georgia	350,000	316,000	325,000
South Carolina	463,000	417,000	475,000
Other places	59,000	46,000	60,000
Total	3,263,000	2,930,000	3,200,000

These receipts with the English imports from Brazil, Egypt, and the East and West Indies, will make the whole supply 3,800,000 bales, against a probable demand of 3,700,000.

As the stocks on hand are lower than last year, this slight excess of supply will not produce any great influence in depressing prices. The amount held in Liverpool, October 13th, was 791,000 bales against 819,000 of the year before, and the stocks in our northern and southern ports on the 1st of September, showed precisely the same figures in 1853 and 1854.

Nor is the stock on hand in all parts of the world excessive. It was 941,000 bales at the end of 1853, against 837,000 in 1852, and 757,000 in 1851, and 798,000 in 1850. For the 31st of December, 1854, it will not probably reach 900,000 bales.

The price now (November 2d, in New Orleans,) is 8¾ cents for middling, and as this is above the average of the last fifteen years, it can scarcely be maintained. The low rates of freight which are certain to prevail for the coming winter, on account of the total cessation in our exports of grain and flour, and the depression of the shipping interest at Liverpool, will tend to keep up prices at our sea-ports.

For the ten years from 1840 to 1849 we exported 7,116.000,000 pounds of cotton, which was valued at the custom-house at $545,000,000, or at an average price of 7¾ cents per pound. For the last five years, the advanced price of our exports has raised the average to 8¼ cents. With a supply above the probable demand, and with a fair stock on hand, this price cannot well be exceeded. But no decline below this average can take place without encouraging consumption, so as to restore these rates for middling cotton.

The prosperity of the South still continues. Our planters have fair crops and fair prices. Neither is large, but both are calculated to cheer and encourage. From 1850 up to the present year, the rates for our great staple have been good, and our crops large. In the five years ending 30th of June last, our exports have sold for about $471,000,000, against $276,000,000 from 1845 to 1850, and $269,000,000 from 1840 to 1845. The present season is not so promising as the last five, but still its rates promise to be remunerative, and its returns abundant. The excessive high prices of land and negroes, which have been prevailing, cannot be maintained, but no disastrous decline or depreciation is upon us. If we are wise, and diversify our planting, by raising those other agricultural products which now bring such fine returns to the farmer, and avoid the excessive production of cotton, this decline may be easily stayed, and our prosperity not only preserved but advanced.

WINDOW-GARDENING.

There are a few golden rules to be observed during winter, of which may be enumarated the following: Water all plants that require it in the morning; leave no water in the saucer of any plant after the whole has become saturated through; never water by dribs, but give the whole a good soaking, or the consequence often is that the top of the mould is wetted, while the lower, containing the roots, is dust; sponge over the foliage as often as it becomes dusty; take a pointed stick, and, once in a while, stir the furface of the soil, but not deep enough to disturb the roots; this acts the same part as hoeing in summer, and tends vastly to the health of the plants. Give each plant space enough for air to circulate around it, if possible; let it have the benefit of a little fresh air at times.

ARTICLE V.

St. Louis Public Schools.

The decay and downfall of the great nations which have passed away is attributable, in a good measure, to the vices of populous cities: and it is a fact which should be impressed upon every American mind that the vices of a civic population are more dangerous in Republics than in communities governed by monarchical institutions. Hence every American citizen should be admonished that as he loves his country, and desires the perpetuation of its institutions, he should discharge his whole duty in respect to the education and moral improvement of the population of our great cities.

Much depends upon an early and well-planned beginning, for vice is a plant of vigorous growth, and if allowed to take root and spread forth its branches, in a little time its eradication becomes impracticable.

In connection with this subject, we are pleased that we can say in truth that the citizens of St. Louis are entitled to the highest commendation for the liberality and public spirit manifested in building up and establishing institutions calculated to ameliorate and improve the physical, intellectual and moral condition of all classes.

In the second volume of the Western Journal we published a condensed history of St. Louis, in which we noticed most of her religious, charitable and literary institutions; but failing to obtain a full account of the public schools, we mentioned but few facts relating to them. Since then, the public school system of St. Louis has been extended to a degree that entitles those under whose auspices it has been developed to the praise and gratitude of the community. The following facts touching the history and present condition of this institution are taken from the first annual report of the General Superintendent, JOHN H. TICE, Esq., to whose sagacity and devotion to the cause of education the present prosperous condition of the public schools of St. Louis is in a great measure attributable.

HISTORY OF THE ST. LOUIS PUBLIC SCHOOL LANDS.

"The act of Congress, of 13th June, 1812, makes it the duty of the United States Surveyor General in Missouri Territory, "as soon as "may be, to survey, or cause to be surveyed and marked (where the "same has not already been done according to law,) the out-boundary

"lines of the several towns, or villages of Portage des Sioux, St. Char-"les, St. Louis, St. Ferdinand, Ville a Robert, Carondelet, Ste. Gen-"evieve, New Madrid, New Bourbon, Little Prairie and Arkansas, so as to include the out-lots, common field lots, and commons, thereto respectively belonging."

The provisions of this law have never been complied with, and perhaps never will. The out-boundary of St. Louis has never been run, and there is too great a pecuniary interest involved ever to permit it to be run, without a struggle to defeat it.

The same act provides: "That all town, or village lots, out-lots or "common field lots, included in such surveys, which are not rightfully "owned or claimed by any private individuals, or held as commons, "belonging to such towns or villages, or that the President of the U. "S., may not think proper to reserve for military purposes, shall be, "and the same are hereby, reserved for the support of schools in the "respective towns or villages aforesaid; provided, that the whole "quantity of land contained in the lots reserved for the support of "schools in any one town or village, shall not exceed one twentieth "part of the whole lands included in the general survey of such town "or village."

The lands "rightfully owned or claimed by private individuals," are defined by the same act to be those "inhabited, cultivated and possessed, prior to the 20th day of December, 1803," (the day that the French commandant gave possession to the United States,) which are confirmed to the claimants respectively.

A supplementary act to the above was passed by Congress on the 26th of May, 1824, which provided, "That it shall be the duty of "the individual owners, or claimants, of town or village lots, out-lots, "and common field lots, in, adjoining, or belonging to, the several "towns and villages, whose lots were confirmed by the act of Con-"gress of the 13th of June, 1812, on the ground of inhabitation, "cultivation, or possession, prior to the 20th day of December, 1803, "to proceed within eighteen months after the passage of this act, to "designate their said lots, by proving before the Recorder of Land "titles for said State and Territory, the fact of such inhabitation, "cultivation and possession, and the boundaries and extent of each "claim, so as to enable the Surveyor General to distinguish the private "from the vacant lots." The act then provides, that after the expiration of term of eighteen months allowed for proving such facts, the Surveyor General shall proceed to survey, designate and set apart, to said towns and villages, respectively, so many of such vacant town or village lots, out-lots, or common field lots, for the support of schools in said towns or villages, as the President shall not have reserved for military purposes, prior to that time. On the 28th of January, 1831, a further supplemental act was passed, relinquishing all the right, title and interest of the United States, in and to the town and village lots, out-lots and common field lots, in the State of Missouri, reserved for the support of schools, in the respective towns and villages, to be sold or disposed of, or regulated for said purpose, in such manner, as may be directed by the Legislature of said State.

Such are the provisions of the grant, but the extent of it, in St. Louis is far smaller than generally supposed. It is true, that origi-

nally, large quantities of lands, being without claimants, were supposed to be embraced in these grants, and claimed as school lands, but for the greater portion of these, claimants have since appeared, who have successfully prosecuted their claims. The remainder, not swept away by private claims, has been seized by individuals, who have only been dispossessed by protracted and expensive litigation, or by heavy compromises, while others still hold adverse to the school title. Some of these pretend to claim by inhabitation, cultivation and possession, under French and Spanish government; others under pre-emption, and others again, under locations of New Madrid certificates.* After nearly twenty years litigation, less than fifty acres have been obtained by the schools, nine-tenths of which has been by compromises. The expense involved by litigation alone is not short of $50,000, and still requires the services of a Counsellor, at an annual salary of $1,000. With the exception of one-quarter block on Fourth and Market street, and a strip 317 feet on Chesnut, by 85 feet on Third streets, the lands lay principally in such parts of the city, where property is not likely to become very valuable. More than one-third is entirely beyond the city limits. Four-fifths of the Broadway property is taken up by Broadway, and Survey No. 316, extending from corner of Chesnut and Fourth streets, south to Elm street, is nearly all taken up by Fourth street.

The value of the whole amount of property, acquired through Congressional bounty, in the possession of the Board, and under lease, is probably about $400,000, and yields an annual rent of about $14,500."

The entire quantity of land held by the Board for school purposes (except lots on which schools are situated) is 170 56 acres, w' ich is estimated to be worth $1,096,815.

Besides the income from the lands, the public schools receive support from the following sources:

"In 1836, a vote was taken to obtain the consent of the citizens of St. Louis to the sale of the Commons; at which election, the citizens also voted to appropriate ten per cent. of the net proceeds of said sale to the establishment and support of Public Schools. The Board has received from sale of Commons, up to the first of July last, a fraction less than $15,000. Last year, the income to the schools, according to the city officers reports, was only some $300, and is not yet received. In the year 1849, a pole was opened in pursuance to an act of the

* The New Madrid certificates, are certificates issued by a special act of Congress, for the lelief of the sufferers by the earthquakes of 1811, for lands destroyed by said earthquakes, or submerged by it, in what is now known as the Big Earthquake Swamp, in Southeast Missouri. Under these certificates, any public lands, subject to private entry, could be entered, and patents obtaiend therefor. But as this law of Congress was passed subsequent to the act of 1812, donating the vacant lands within the out-boundaries of the several towns and villages of Louisiana Territory, of course these certificates could not be located upon these lands, because they were no longer Public lands, subject to private entry. Yet, nearly all the school lands in St. Louis were covered by them, and a large portion is still held adversely to the schools under them.

Legislature, to test the sense of the people, whether a tax of one-tenth of one per centum shall be assessed and collected for educational purposes, which was carried by a large majority. This tax, in 1850, being the first year, amounted to $18,432. This year it will probably be $28,000. At the last session of the Legislature of Missouri, a new school act was passed, setting apart one-fourth of the entire State revenue for educational purposes, and also giving the children of the city of St. Louis their *pro rata* of it, and all the other State school moneys. Under this act, the Board, during the last fiscal year, being the first distribution under the act, received $27,456,51. Such is the nature of the provisions for the establishment and support of Public Schools in this city. The history of the incorporations made to administer these legislative provisions deserve briefly to be traced."

SCHOOLS AND SCHOOL HOUSES.

A Board of Trustees for superintending Schools in the town of St. Louis, was incorporated by an act of the Legislature, passed 30th January, 1817. Gen. William Clark, William C. Carr, Col. Thomas H. Benton, Bernard Pratte, Auguste Chouteau, Alexander McNair, and John P. Cabanne, were named in the act as first Board of Trustees. The Board was organized on the 4th day of April, 1817. Gen. Clark was elected Chairman, and Col. Benton was appointed Secretary, which office he held, as we learn from the report before us, until the 15th of February, 1827. It does not appear that any schools were established by the first Board, and the last record of their meeting bears date the 5th of April, 1828.

"PRESENT BOARD. The act of incorporation of the present Board, was passed on the 13th day of February, 1833; and on the first Monday of April, in that year, an election was held for Directors, which resulted in the choice of Hon. Edward Bates and John P. Reily for the South Ward, Josiah Spalding and Judge Mary P. Leduc of the Middle Ward, and Dr. Cornelius Campbell and Hugh O'Neil, Sen'r. of the North Ward, who met on the 18th of said month, and organized, by electing Judge Mary P. Leduc, as President."

In 1837 the Board commenced the building of two school houses, each two stories high, one located at the corner of Spruce and Fourth street, and the other at the corner of Broadway and Cherry street. The building of these houses was undertaken for the sum of $3,170 each. The opening of these schools was fixed by the Board to take place on the first day of April, 1838. David Armstrong and Miss Mary H. Salisbury were elected teachers for school No. 1 at the corner of Spruce and Fourth streets, and Edward Leavy and Miss Sarah Hardy were elected teachers of school No. 2 on Broadway. The salaries were fixed at nine hundred dollars per annum for the male teachers, and five hundred dollars per an-

num for the female, payable quarterly. School house No. 3, on 6th street, now called the Benton, was built in 1841, at a cost of about $10,625, and the school opened on the first Monday in January, 1842. Admission fee $2.50 per quarter, and salary of male principal $900, female $500. The public schools now number twenty-seven, employ seventy-two teachers, and when full, will accommodate upwards of four thousand pupils, the daily average during the last year being three thousand seven hundred and ninety-one.

No entrance fee is now charged by the Board; the public schools of St. Louis are open and free to all classes alike. The following judicious remarks on the efficiency of the public school system are copied from the able and valuable report of the Superintendent.

"EFFICIENCY AND COST OF INSTRUCTION. That the system of public instruction possesses immeasurable advantages over the private system is too palpable to be questioned. The private teacher either more or less has to sacrifice his independence and a sence of duty, to accommodate his requirements to a conformity with the whims and caprices of the parent and child, or of both. To exact as little study and mental labor as possible from the pupil, is generally acceptable to pupils, and makes the teacher popular with them; and popularity with the pupils is synonymous with popularity with the parent. But thorough scholarship, efficient and varied mental discipline, clear conception of principles, and the power of elucidating them and legitimating the conclusions to which they lead, are incompatible with the tenderness with which a private tutor has to handle his pupils so as to give them no offense. The public teacher has none of these influences to make him swerve from the line of duty for the sake of policy. He, to be sure, and properly too, is subject to public opinion; but this public opinion is in favor of a fearless performance of duty, and a faithful discharge of the trust committed to his hands. It is only by a wanton and systematic outrage of the principles of humanity, that a teacher, like every one else that does so, becomes odious to the community. It is never a matter of any concern with him whether he pleases or displeases this or that child, or parent; but his only concern is, to know and do his duty, and faithfully to administer the trust reposed in his hands by the Directory. He has but one rule to govern his conduct, and that is the line of duty, which he is bound to pursue, letting consequences to take care of themselves. The Board prescribes conditions upon which any and all can enjoy the benefits of public instruction: those who will not comply with these conditions, must forego the privileges; and for no man, it matters not what his station, or how great his wealth, will these conditions be changed. In fine, the public teacher has the parent in his power; whereas, under the private system the parent has teacher in his power. From this arises the superiority in efficiency of the public system of instruction, over the private.

The public system has not only the advantage in general efficiency, but also in economy. In our Primary Schools, the average annual cost

of educating one pupil is about five dollars; in private schools it averages thirty-six dollars; in our Grammar Schools the average annual cost is about $12.75; in private schools for the same studies the average is $60; in our High Schools the average annual cost of educating one pupil is about $30; in private schools the same studies average $90. The average annual cost per pupil in all the Public Schools for the year just closed was $10.32; in private schools the average is $50, per head.

This shows a difference of five to one in favor of the Public School system. Estimating the number of persons of educateable age in the city of St. Louis at 23,000; these at $50 per head, if educated in private schools, would cost $1,150,000 per annum; but if educated in Public Schools the same would only cost $237,360; showing a saving of, $912,640 annually. There are many other points presenting social, moral and political aspects, in which the public and private systems of educating may be contrasted, in which the advantages are just as overwhelmingly in favor of the Public system; but space forbids enlargement upon them. I therefore merely indicate them, and commend them to the politician, philanthropist and christian, as worthy of their most serious consideration and prompt action."

"COMPARATIVE COST WITH OTHER CITIES. There are not sufficient data at hand for me to institute a strict comparison between the cost of education in St. Louis and that of other cities. Last year, the total amount expended for support of schools in St. Louis was $38,800.70, including salary of Counsellor, special taxes, &c., incidental expenses to the Board as landed proprietor. I estimate these incidental expenditures to amount to at least $2,000 per annum. If these be deducted, the amount of expenditure of Schools will only be $36,800, and the number of daily attendance being 3,791 pupils, the cost of education per head, was only about $9.75. There is accommodation for about 4,100 pupils in the schools, and if all the schools had been full the expense would not have been greater. This then would show, that children can be educated in the Public Schools for about $9 per head, per annum. It must also be borne in mind that for officers' salaries and various other expenditures, the amount paid for 4,000 pupils is as great as it would be for 10,000 or 15,000. The present cost of education in St. Louis may be then assumed to be as high, as it ever will be; even under a system of more liberal salaries, which the Board will be compelled to adopt, *nolens volens*. I take the following statement of comparative cost of tuition, from the last annual report of the Board of Education of the city of New York, presuming them to be correct: New York annual cost per pupil $6.86: Philadelphia $8.11: Boston $14.35: Baltimore $12.30: average in twenty-five of the largest cities in the Union $9.04. I have not had time to verify these amounts, where I have the data, neither do I know whether the New York estimate includes the expenses of the Free Academy, nor that of Philadelphia that of its High Schools, nor how these estimates are made up; but it will be seen, that the cost of tuition in St. Louis compares favorably with the cost elsewhere, when it is considered that living is higher here than in the eastern cities. I again call attention to the fact, that the expense of Public tuition is greater per head in proportion as the number is small. In the year 1851, when the

number of pupils in the schools was about 2,100, when there was no High School, when the Superintendent's salary was only $1,000 per annum, when the salaries of teachers were on an average fifteen per cent. lower than now, I presented in the annual fiscal report a cost of tuition per pupil, and the expense as then shown was $10.49 per head, per annum. Now the Superintendent's salary has been increased fifty per cent.; some of the teacher's salaries forty per cent.; and a High School established, yet the annual expense of tuition has actually receded. If things had remained the same, the actual recession of tuition would have been at least twenty per cent. From these facts, I conclude that when our school system is fully organized and in operation, with High Schools for the accommodation of all who wish to take the higher course of studies, and with liberal salaries, so as to secure the best educational talent in the country, the cost of tuition, on an average, of those attending school, will not exceed $10 per head, per annum."

FINANCES.—RECEIPTS for the fiscal year ending July 1st, 1854, were as follows:

Rents from leased lands	$13,253 53
State School moneys	27,456 51
County School moneys	3,587 28
Quit Claims, lands sold and compromised	14,687 19
City School Tax	27,758 85
Interest	216 19
Bills Receivable	29 00
Total	$87,088 55

The expenditures during same period were $64,653.95, leaving $22,434.60 balance in the Treasury, besides $2,000 city bonds.

HIGH SCHOOL.

We agree with the General Superintendent in the opinion that the Board of Directors have acted wisely in establishing High Schools: without these, their system would have been incomplete, and could never have obtained that degree of spmpathy and support which are necessary to develop the efficiency and usefulness of all literary Institutions.

In connection with this subject, the General Superintendent says:

"There is nothing that the Board has done for many years that has had a tendency to popularize the Public Schools so much, and make them the schools of the city as the organization of this High School, and the erection of the splendic High School edifice now in progress. All classes and conditions of society, from the widow, who earns a livelihood for herself and children by her daily toil, to the millionare, who counts his income by thousands, are now pressing for admission into the Public Schools; and the regret is, that the applicants can not

all be accommodated. The rich are applying from a conviction that for thoroughness there are no institutions in the country that surpass the Public Schools; and for extent, few colleges afford such a range of science and such opportunities of scholarship as the High School will when fully organized. The poor and those of small income see in these popular institutions the means of putting their sons and daughters upon an equality with the rich, as far as intellectual cultivation and literary acquirements are concerned. A great point has therefore been gained, that of uniting all classes and conditions in the support of the Public School system: First, by establishing that high character for efficiency and thoroughness for our Primary and Grammar Schools, which they now occupy; and second. in organizing a High School, and making such complete arrangements for its successful conduct as to give assurance that all scientific and literary attainments desirable will be furnished free of expense to all who wish to avail themselves of them."

In the winter of 1852-3 the Board organized a High School, which it temporarily located in the Benton School, on Sixth between St. Charles and Locust streets. The school opened for the reception of pupils on the first Monday of Febrnary, 1853, and after an examination, some seventy odd pupils were found qualified and admitted. The school was placed under the charge of Jeremiah D. Low, A. M., long connected with the St. Louis Public Schools, and favorably known to the public as a successful and popular teacher. The school still remains in his charge, and is in a highly prosperous and flourishing condition, numbering one hundred and ten pupils.

The lot on which the splehdid High School edifice is now being built, was purchased in January, 1853: it contains 150 feet front on Olive street, by a depth of 106½ feet, and was bought from James H. Lucas at $100 per front foot, upon time. The notes added to the principal make the lot cost $17,900. The contract for erecting the building was made last spring with Sage and Webster; it will cost about $45,000; and will be completed about the first of July, 1855.

Description of House.—The building in its extreme length is one hundred and six feet four inches; and extreme width eighty-four feet, that is, including towers and transepts. The body of the building is eighty-four feet, by sixty-seven; main height seventy-one feet; and to the apex of the roof eighty-six feet. Front square tower, used respectively in each story for reception room, library, museum, and astronomical observatory, one hundred and six feet high. Octagonal tower flanking each corner, one hundred and two feet high; finished with ogee pinnacled roofs, ornamental crotchets on each angle, terminated with large foliated finials. The wings or transepts on the sides, are thirteen by seventeen feet, with large gothic windows, seven by thirty-four feet, filled with tracery and with ogee crocheted hood moulding, and finial. A similar window is in the large square front tower. All the windows have large cast iron hood mouldings to be painted in imitation of stone; buttress caps, string courses, and wall copings, also, of cast iron, and finished in the same manner; roof covered with slate, with copper gutters. Transverse and longitudinal halls, divide the first and second stories into four rooms each, and

each room capable of accommodating seventy scholars. The desks are supported in an entire new style, by means of a cast iron peristyle, with large pedestal and four claws for screws; peristyle placed in the centre of the desk, adding much to the comfort, cleanliness, quiet, and free ventilation of the room. The desks are made of cherry and varnished. The chairs, which are on the arm chair fashion, are supported similarly to desks, move on a pivot so as to turn one-quarter way round, and the iron work of both desk and chairs are neatly bronzed. Wardrobe rooms in the towers, are attached to each school room, with hydrant, and iron sinks for washing and drinking purposes. The philosophical and chemical lecture room in the basement, is sixty-one feet by thirty-one feet, with apparatus rooms in towers, with sinks and water; also, two fire places at each end of the room for experiments in chemistry and philosophy. The other basement is used by three furnaces for heating the building. The upper, or great hall in the third story, being the full size of the building, is large and commodious, capable of accommodating six hundred persons. A large platform, twenty feet deep, and the width of the building is at the south end of the hall, to be used by scholars on examination day, and for recitation, declamation, and reading their exercises; also, for a stand for lecturers. There is a retiring room behind the platform in the front tower, for scholars to prepare themselves for performing respective parts in dialogue, &c. From this retiring room a flight of stairs ascends to the astronomical observatory. The rooms in the octagonal towers of this story are intended for committee rooms for directory, or for private conference of teachers and parents, or friends, at general exercise, or on examination day. There are two museum rooms in the second story of the transepts, one for males and the other for females. The entrance or reception room, for strangers and parents, is in the first story of the observatory, or front square tower on Olive street. Over the reception room is the library room. Perfect and thorough ventilation is aimed at, and the latest improvements to attain it adopted. The stairs are broad and direct, giving free and easy access to, and from the building at all times, and securing against all accidents in case of alarm of fire, &c. All the finishing of the school rooms and halls, are to be grained oak and varnished. Wardrobe rooms are to be supplied with double clothes' hooks; halls with umbrella racks, troughs, and places for overshoes, all made of cherry and varnished.

ARTICLE VI.

Lead in Southwest Missouri.—Moseley's Mines.

We are indebted to G. W. Moseley, Esq., of Neosho, Mo., for the following interesting account of the Lead mines, mining and lead trade in Southwest Missouri. We value this document the more highly because it is evident from its tone that it is not written for effect. From our knowledge of the author we feel assured that he is no speculator in mineral lands and fancy mining stocks; and it is quite refreshing to contrast the primitive, honest method by which mines have been opened and metal smelted in Southwest Missouri, with the mining stock speculations which have been projected in other parts of the country for some years past. We trust the time is not far distant when the principal cause of discouragement to mining in that region will be removed. The construction of the Southwestern Railroad will be the means of removing that cause and of developing the most extensive and perhaps the richest lead region of the United States.—*Ed.*

Neosho, Newton co., Mo., Nov. 25, 1854.

MESSRS. TARVER & COBB.

Gentlemen: — I have just been making out some accounts for Professor Swallow in regard to the minerals and mining operations in Southwest Missouri. I have thought that you would like to have a correct account of the amount of mineral raised and smelted in this new mineral region of Missouri. The following statements may be relied on. I have put myself to a good deal of trouble to collect the facts, and if you deem them of sufficient importance to give them a place in your valuable Journal, you will oblige me, and save me a great deal of trouble in answering letters of enquiry from various places.

The first smelting of Galena-Lead ore—in Southwest Missouri was commenced in the year 1850 by Mr. A. Spurgeon, on section 32, Township 26, Range 32, in Newton County. Mr. Spurgeon raised from this section 226,000 pounds ore, which he smelted in log furnaces in the years 1850 and 1851. The log furnaces used in this country were generally constructed on the side of a hill. They were made 8 feet wide, 10 feet long, 6 by 8 feet in the clear, and the walls about 5 feet high. In the front of the furnace was an eye, say 2 feet square, through which the fire was stirred, and out of which the lead run when melted. The bottom of the furnace was laid with flat stone, the wood was prepared by cutting large logs to drop in the furnace, together with some dry wood,

the mineral being mixed with the wood, after being washed in a common trough made from a hollow tree. The furnace being charged in this way, the fire is kindled, and the melted lead caught in a common dutch over.

This mode of smelting produced some 80,000 pounds of lead, sold for $4,000, and yielded about 35 per cent. This lead was generally peddled out in the small towns and in the Indian country on our western border.

In the year 1850, Moseley & Co., of Neosho, built a furnace known to smelters as the Drummon furnace, situated near to Moseley's mines. On this furnace G. W. Moseley & Co. smelted from their own mines on section 35, township 26, range 32, in Newton county, 250,875 pounds of lead ore, and 25,000 pounds purchased at other mines. The mineral smelted in this furnace yielded a fair per cent; (the lead being shipped to New York and Boston.) In the fall of 1851, G. W. Moseley & Co. commenced building a blast furnace, with two stacks, propelled by water-power, and on the 9th day of February, 1852, they completed this furnace, at a cost of $3,000. They smelted from the Moseley's mines 142,500 pounds of ore; from Center creek, in Jasper county, 99,074, and from Turkey creek, in Jasper co., 95,073.

In July, 1853, this blast furnace went in to the hands of the Moseley Lead Manufacturing Company. They smelted from the Moseley mines 110,500, and from Oliver's Prairie, in Newton co., and Center and Turkey creeks, in Jasper co., 93,000 lbs. of ore.

In Jasper county, Mo., Mr. Harklerodes erected a blast furnace, single stack, in the early part of the year 1853; and from the best information that I have, has smelted since he commenced from Center and Turkey creeks, in Jasper county and Olivar's Prairie, in Newton county, some 300,000 pounds of ore. The amount of mineral that is at present on hand, and which will be ready for delivery by the 20th of December next, is estimated at 200,000 pounds.

Since the commencement of the lead business, in 1850, up to the 20th December, 1854, we show of the ore raised 1,551,022 pounds. Until this last spring the lead has been transported say from Moseley's furnace to Moseley's Landing, on Grand river, in the Seneca nation, by wagons, at 25 cents per 100 pounds, and thence by flatboats to Fort Smith, at a cost of 40 cents per 100 pounds, and thence to New Orleans by steamboat. G. W. Moseley & Co. had their lead always insured on flats, with privilege of reshipping, at a cost of 2½ per cent. on its value at New Orleans. The usual price of freight from Fort Smith to New Orleans is fifty cents per 100 pounps. G. W. Moseley build their own flatboats, and hawled the lumber fifty miles. The three years that they shipped their lead down Grand river, their bills of lading date in May and July in each year, they have shipped from 800 to 1,000 pigs of 70 pounds each, upon a single boat. It is said that boats could

go with much larger loads; one season they shipped on 30 feet water. There are several objections to shipping by Grand river: first, its location in the Indian country, secondly, the great difficulty of getting lumber, and thirdly, the river can only be relied upon in May and July of each year.

If persons engaged in the lead business had a sufficiency of capital to purchase mineral and hold on to the lead until these periods arrive, say May and July in each year, lead could be sent much cheaper than by Boonville to St. Louis. For instance, the same boat that carried 1,000 pigs to Fort Smith, could be made with very little additional expense to carry 2,000 pigs with equal safety. Since the Seneca country has been treated for by our government, mills will be erected to saw lumber: all these things will still lessen the expense; and I think without a doubt that lead can be delivered at New Orleans from this country for 80 or 85 cents per 100 pounds by this route. The Moseley Lead Manufacturing Company sent their lead to St. Louis, last spring, by Boonville; transporting it to Boonville on wagons, at $1 per 100 pounds, and thence by steamboats, at a cost including charges of storage, receiving, forwarding, insurance, freight, &c., of 25 cents per 100 pounds.

It is a safe calculation to say that 1,000 pounds of good lead ore, smelted in the blast furnace, will yield 650 lbs. of lead; this at the present prices in St. Louis, 6 cents, will be $39.00. Cost of transportation to St. Louis, at 1¼ cents per pound, will be $8.12½. The 1000 pounds of ore in the Galena mines, in Illinois, will yield the same 650 lbs., and be worth in St. Louis $39.00. I supposes that lead can be shipped from Galena at 30 cents per 100 pounds; this would be $1.95 for each 1000 pounds of the ore: this will make a difference of $6.17½ in favor of the Galena smelters. For example, if in Galena mineral is worth $30.00 per thousand pounds, it is only worth here in Southwest Missouri $23.82½. Thus it will be perceived that, should lead again go down to a price that would depress the value of mineral at the Illinois mines to $15.00 per thousand pounds, it would be worth only $8.82½ per thousand in Southwest Missouri, which would be discouraging to the miners of this region. Yet so long as we have to hawl in common wagons to Boonville, this state of things will exist. Furthermore it is only a limited amount of lead that can be sent to St. Louis, even at the rate of one dollar and twenty-five cents per hundred pounds. For instance, I say to a wagoner, sir, I have a load of lead to send to Boonville, and I would be glad you would start in three days. His reply is, have you a back load? I answer, no. Then, he says, I cannot hawl it unless I can get a load of goods to hawl back for some of the merchants; if you are very anxious for your load to go, and I cannot get a load to hawl back, I will take your load, if you will pay me $2 per 100 pounds, the Boonville prices to Neosho at this season of the year; but if

you will wait until my team can live on grass, I can afford to haul for $1.50 per hundred. These are prices which the owner cannot afford to pay, and of course the lead remains on hand.

G. W. Moseley & Co. have sold their lead in Boston and New-York, where they obtained the same prices paid at the time for Illinois lead. Our best mineral, when analyzed, is found to contain 85 per cent.; no other district in the United States, I believe, produces richer ore. I should think all assayers would be satisfied of this, were it not for what I once saw not a hundred miles from our city. A gentleman who had been traveling through our section of country, and also through the Washington and Madison county mines, and had lived for many years near the latter, was exhibiting to the President of a corporation the different specimens of ore, and among them one from Moseley's mines, of this county. While the President was carefully examining each specimen, the gentlemen called his attention to one from his own favorite home, and said, this is the best specimen I have seen; this will yield 90 per cent. of pure lead. I sat in silence, and thought to myself that the President would correct the gentleman, but he did not.

Our mineral region embraces the counties of Jasper, Lawrence, a portion of Grundy, Barry, McDonald and Newton, in Missouri, the country claimed by the Quapaw, Seneca and Shawnee Indians, the northeastern portion of the Cherokee country, and through Northwest Arkansas. There can not be a doubt but this country is the most extensive mineral region in the United States.

I have endeavored to give you a fair and honest expose of this country, representing it as it is, with its advantages and disadvantages. Give this country a railroad, and its mines when fully developed will send more lead to St. Louis, than Iowa, Wisconsin and Illinois send to that and every other market.

Yours, respectfully, G. W. MOSELEY.

ARTICLE VII.

Ancient Fauna of Nebraska.

FROM THE EIGTHTH ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

1. The first memoir published during the past year is one by Dr. Joseph Leidy, Professor of Anatomy in the University of Pennsylvania, entitled, "The Ancient Fauna of Nebraska."

A consideradle portion of the country between the Mississippi and the Rocky mountains consists of the more recent geological deposits, and particularly on the Upper Missouri there exists a tract of country

known by the name of the Mauvaises Terres, or the Bad Lands; this at one time was probably the bottom of an immense lake, in which perished thousands of animals having no representatives at this time on the surface of the earth. It appears that the waters of this lake were removed by some convulsion of nature, that the sediment at its bottom became indurated, and that afterwards the whole country was traversed by an immense wave of water, which carried away the softer parts of the strata, and left standing the harder parts in a series of irregular prismatic and columnar masses frequently capped with irregular pyramids, and extending upwards to a height of from one to two hundred feet. "Viewed in the distance, these rocky piles in their endless succession assume the appearance of massive architectural structures, with all the accessories of buttresses, turrets, and tapering spires." The portion of the surface thus excavated forms a valley of ninety miles in length and thirty in breadth, which in its most depressed portion is about three hundred feet below the surface of the surrounding country. So thickly are the natural towers studded over the surface of this extraordinary region, that the traveller threads his way through deep confined passages, which resemble the narrow irregular streets and lanes of some of the old towns of the continent of Europe. At the foot of these columns, the remains of the ancient animals, which lived and breathed long before the advent of man upon the face of the earth, are found in such abundance as to form of this tract an extensive cemetery of vertebrated animals, rivalling, in the variety of its extinct species, the celebrated beds of the Paris basin.

This region having been brought to notice by a few fossil remains procured through the agents of the American Fur Company, an appropriation of about $200 for its exploration was made by the Smithsonian Institution to Mr. Thaddeus Culbertson, who was about to visit, on account of his health, the sources of the Missouri. The specimens of fossil remains which were thus procured, together with a collection subsequently presented to the Institution by Capt. Stewart Van Vliet, of the U. S. army, and several specimens kindly lent by Dr. Prout, of Missouri, were referred to Dr. Leidy for examination. In addition to these he had the use of a collection lent by Prof. O'Loghland, of Missouri, specimens belonging to the Academy of Natural Sciences, Philadelphia, and a collection made by Dr. Evans, at the instigation of Dr. D. Dale Owen, the whole embracing all the specimens which have yet been brought to the east from the Bad Lands. The bones are completely petrified, and their cavities filled with silicious matter. They are preserved in various degrees of integrity, some being beautifully perfect and others broken and imperfect, the latter having been evidently subjected to violence while imbedded in a soft mud. The animals belong to the classes mammalia and chelonia, or turtles. With a single exception, all the species of mammalia belong to the great order of ungulata or hoofed animals, of which there are seven species of four genera, which belong to the ruminantia, or cud-chewing animals; two species of one genus belonging to the paradigitata ordinaria, or even-toed animals; one species of the solipedia, or solid-hoofed animals; and four species of three genera belonging to the imparidigitata ordinaria, or uneven-toed animals.

The first specimen described belonged to a peculiar genus of ruminants which, among recent animals, is more nearly allied to the musk, and was probably hornless. The next is of a remarkable genus of ungulata representing a type which occupies a position in the wide physiological interval existing between recent ruminants and the anomalous fossil animal called the anoplotherium. Another genus is called oreodon, and constitutes one of the links necessary to fill up the very wide gap between existing ruminants and an exceedingly aberrant form of the same family now extinct. Another organic relic is that of an animal which combined the ruminant and carnivorous characteristics, of which there are several species. There are also two remarkable species of rhinoceros, differing from any remains of this animal found in other parts of the globe. The existing species of the rhinoceros are met with in Africa, Asia, and the islands of Java and Sumatra. Remains of extinct species have been found in Great Britain, the continent of Europe, Siberia, and the Himalays; but no trace of this genus had previously been discovered in America. Another fossil remain belongs to the feline family, about a fifth smaller than the American panther, and is probably the most ancient known genus of this animal. Hundreds of fossil turtles are found in the "Bad Lands;" they belong to the genus testudo, of which five species are described in this paper.

The memoir occupies one hundred and twenty-six pages, and is illustrated by twenty-four plates, one of which is a folio. It has already been printed and copies distributed among working geologists. No copy-right is secured on the publications of the Institution; and it may be mentioned here, as an illustration of the manner in which the knowledge contained in the Smithsonian memoirs reaches the public generally in a popular form, that one of the figures of this paper has already been copied, and some of its materials given in a recent work on geology.

N. CAROLINA STATE DEBT AND RAILROAD SYSTEM.

The debt of the State of North Carolina amounts to $8,800,000; the revenue from all sources is estimated at $200,000. As this sum is not sufficient to defray the State expenses and discharge the annual interest, a scheme will be proposed to the next Legislature to increase the taxes. The late loan of $260,000 was taken at Raleigh at 100½. The State is pursuing its system of internal improvements, and several of the railroads in which it is interested have commenced paying dividends. Wilmington and Raleigh railroad, after sixteen years' struggle has been able to clear a semi-annual dividend of four per cent.; the Raleigh and Gaston railroad has just declared a dividend of six per cent. for the last year; and the recently completed Wilmington and Manchester railrord, in its first year, gives evidence of being good stock.—*Balt. Am.*

STATISTICS OF THE UNITED STATES.

Report of the Secretary of the Treasury on the State of the Finances.*

TREASURY DEPARTMENT,
December 4, 1854.

SIR: In obedience to the "act supplementary to the act entitled 'an act to establish the Treasury Department,'" approved May 10, 1800, the following report is submitted:

The balance in the treasury on the 1st of July, 1853, was		$21,942,892 56
And the actual receipts into the treasury for the first quarter:		
From customs	$19,718,822 00	
From lands	1,489,562 05	
Miscellaneous	147,994 87	
	21,356,378 92	
And the estimated receipts for the other three quarters were:		
From customs	37,000,000 00	
From lands	3,000,000 00	
Miscellaneous	300,000 00	
Making the actual receipts for the first quarter, and the estimated receipts for the other three quarters		61,656,378 92
Add balance in the treasury		21,942,892 56
Total for service of the year		83,599,271 48

The actual expenditures of the first quarter of the fiscal year 1853 were $15,081,383 70, and the estimated expenditures for the remaining three quarters were $57,251,283 16, making for the actual expenditures of the first quarter, and the estimated expenditures for the other three quarters, $72,332,666 86; which would have left an estimated balance in the treasury on the 1st of July, 1854, of $11,266,604 62.

The actual receipts into the treasury for the fiscal year ending 30th of June, 1854, were as follow:

1st quarter—from customs			$19,718,822 00
from lands			1,489,562 05
miscellaneous			147,994 87
		21,356,378 92	
2d quarter—from customs			$13,587,821 27
from lands			2,223,076 39
miscellaneous			101,963 64
		15,912,861 30	

* We publish the following Report of the Secretary of the Treasury on the state of the finances chiefly on account of the statistics which it contains: we make no comments. For having, in the 11th volume of this Journal, reviewed at some length the doctrines and policy set forth in his report to the first session of the present Congress, we could only reiterate in substance what we wrote and published on that occasion.

3d quarter—from customs		$16,896,724 83
from lands		2,012,908 36
miscellaneous		486,091 93
		19,395,725 12
4th quarter—from customs		$14,020,822 17
from lands		2,745,251 59
miscellaneous		118,666 10
		16,884,739 86
Making		$73,549,705 20
Balance in the treasury 1st of July, 1853		21,942,892 56
Total sum for the service of the fiscal year ending June 30, 1854		95,492,597 76
The receipts from customs were		$64,224,190 27
lands		8,470,798 39
miscellaneous		854,716 54
Balance in treasury		21,942,892 56
		95,492,597 76
The actual expenditures for each quarter of said year were—		
For 1st quarter	$15,081,383 70	
2d quarter	22,301,896 24	
3d quarter	12,448,947 42	
4th quarter	25,522,402 90	
		75,354,630 26
Leaving a balance in the treasury on July 1, 1854, of		20,137,967 50
The usual and ordinary expenditures were as follow:		
Civil list		$4,649,384 98
Foreign intercourse		7,726,677 13
Miscellaneous		13,531,310 33
Interior department		2,609,054 79
War department		11,733,629 48
Navy department		10,768,192 89
Redemption of public debt, interest and premium		24,336,380 66
Total expenditure		75,354,630 26

Balance in the treasury on July 1, 1854, $20,137,967 50, as appears, in detail per Statement 1.

The estimated receipts for the fiscal year, ending June 30, 1855, were as follow:

From customs	$51,000,000 00
From lands	3,500,000 00
Miscellaneous	500,000 00
	55,000,000 00
Add estimated balance in the treasury July 1, 1854	11,266,604 62
Estimated resources for the fiscal year ending June 30, 1855	66,266,604 62

The estimated expenditures for the same year were as follow:

Balance of former appropriations to be expended during the year	$6,865,126 44	
Permanent and indefinite appropriations to be expended during the year	8,285,716 14	
Specific appropriations asked for the service of the year	35,909,434 54	
Making an aggregate of		51,060,277 12
Leaving in the treasury, on July 1, 1855, a balance of		15,206,327 50

The receipts of the 1st quarter of the fiscal year, ending September 30, 1854, have been as follow:

From customs	$18,639,798 45
From lands	2,731,654 12
Miscellaneous	149,850 28
Total	21,521,302 85

The expenditures for the same 1st quarter have been as follow:

Civil, miscellaneous, and foreign intercourse	$6,241,749 31
Interior Department	2,175,737 13
War Department	3,367,039 92
Navy Department	2,508,791 09
Redemption of public debt, interest and premium	1,876,013 17
Total expenditures	16,169,330 62
Receipts from all sources for the remainnig three quarters of the year are estimated at	42,500,000 00

The receipts for the first quarter, the estimated receipts for the remaining three quarters, and the balance in the treasury on the first day of July, 1854, make a total sum of $84,107,967 50 for the service of the fiscal year ending June 30, 1855.

The estimated expenditures for the remaining three quarters of the year are as follow:

Civil List, foreign intercourse, and miscellaneous	15,066,931 13
Deficiency in the Post Office Department	2,719,464 00
Interior Department	3,133,655 25
War Department	13,628,350 90
Navy Department	11,258,095 71
Interest on the public debt	2,370 093 60
Making	48,176,590 59
Total estimated expenditures for the year 1855	$64,345,921 21

The expenditures of the first quarter, and the estimated expenditures for the remaining three quarters, are $64,345,921 21, leaving an estimated balance in the treasury, on the 1st day of July, 1855, of $19,762,046 29.

There is always, at the close of the fiscal year, a balance thus estimated, not expended, of at least $12,000,000. That $12,000,000 may be applied to the purchase of the public debt during the remaining three quarters, without disturbing the estimated balance in the treasury.

The amount of the public debt, outstanding on the 1st day of July, 1853, was	$67.340,628 78
And on the 1st day of July, 1854	47,180,506 05
Being a reduction of	20,160,122 73

The estimated receipts for the fiscal year ending June 30, 1856, are as follow:

From customs	$56,000,000 00
From lands	6,000,000 00
Miscellaneous	500,000 00
	62,500,000 00
Add estimated balance in the treasury July 1, 1855	19,762,046 29
Making the estimated sum of	82,262,046 29

for the service of the fiscal year 1856.

Estimated expenditures for the fiscal year 1856:	
Balance of former appropriations, to be expended this year	$11,212,905 20
Permanent and indefinite appropriations, to be expended this year	7,934,411 70
Appropriations asked for, and to be expended this year	41,722,516 47
	60,869,833 37

Upon this estimate of the receipts and expenditures of the fiscal year 1856 there will be a balance in the treasury, on the 1st of July, 1856, of $21,392,212 92, without expending anything in the redemption of the public debt; but if $12,000,000 shall be applied to the redemption of the public debt, which may be done, there will remain an estimated balance in the treasury of $9,392,212 92.

It appears the receipts from customs, for the second, third, and fourth quarters of the fiscal year 1854, were not diminished from the pressure in the money market and other causes, as expected in my former report. They were kept up from importations, growing out of large exports of provisions, caused by the scarcity in England and France, and the expected demands of the European war, and by the shipments to this country of foreign manufacturers, who, owing to the want of a remunerating market in those countries, sought the benefit of ours. They were also kept up by a greater uniformity and better valuation of foreign goods, and a diminution in smuggling, caused by increased vigilance on the part of the revenue officers. The foreign and internal immigration to the new States and Territories, combined with speculative investments in the public lands, greatly increased the receipts from that source; so that, instead of a reduced revenue, as anticipated, the receipts have been greater than in any previous year.

It also appears from the statement of the receipts of the first quarter of the fiscal year 1854, that the receipts, both from customs and lands, have been greater for the quarter than a fair proportion of the estimated receipts for the year. This has grown out of the same causes that kept up the receipts from customs and lands, for the last three quarters of the fiscal year 1854, aided as to lands, to some extent, by the effect of the act graduating the price, which operated in favor of the receipts, for the latter half of the quarter.

The receipts from customs for the remaining three quarters of the year cannot be in proportion to those of the first quarter, owing to the reciprocity treaty, introducing free trade with the British colonies, and the short crops in almost all portions of the country, which must materially affect the exportation of provisions, and the return importations, and diminish the ability to purchase and pay for foreign goods. The effect of a scarcity of provisions, with consequent high prices, has always been to diminish the consumption of other articles of customary use, and may be expected to operate on the importations for the remaining three quarters of the year, as it certainly will on the consumption. Moreover, the United States have enjoyed a long period of agricultural, manufacturing, and commercial prosperity, under extended bank and other credit facilities, backed by the immense production of gold from the mines of California. This has led to large speculative investments in railroads, lands, lots, houses, ships, stocks, and other enterprises, and to enhanced prices for rents, labor, provisions, and all the necessaries of life. The bank and credit facilities

have been in check for more than a year, with a prospect of a continued check; whilst the large and extended indebtedness of operators has to be met under receding prices, without the stimulating effect of new enterprises. This will also act in restraint of importations and consumption. In the estimated receipts from customs for the three remaining quarters of the current fiscal year, the effects of the reciprocity treaty and reduced importations have been considered; whilst, also, the same causes will operate in the sale of the public lands; but the effect of the act graduating the price has been considered sufficient to keep up the receipts from the latter source to what they were for the fiscal year 1854.

The estimate of receipts for the fiscal year 1856 has been made from an expectation that the same causes which will operate to reduce the importations and consumption of foreign goods for the remaining three quarters of the fiscal year 1855, will be continued through a part of the succeeding year, and sensibly affect the importation and consumption of foreign goods.

The accompanying table, 3, exhibits the particulars of the public debt on the 1st of July, 1853, and the accompanying table, 4, exhibits the particulars of the public debt on the 1st of July, 1854, to which is appended a table exhibiting the interest paid on the public debt during the fiscal year 1854, and the principal, interest, and premium, on the part redeemed within that year. Table 5 exhibits the principal, interest, and premium on the public debt redeemed from the 1st July, 1854, to the 20th of November, 1854. From these tables it appears that the sum of $20,098,422 73 of the public debt was redeemed between the 1st of July, 1853, and the 1st of July, 1854, and that the interest and premium paid on the amount redeemed was $3,345,545 23; and the principal, interest, and premium on that part of the public debt redeemed between the 1st of July, 1854, and the 20th of November, 1854, was $2,604,203 51.

The table, 6, which accompanies this report, exhibits the tonnage engaged in our foreign and coasting trade from the year 1789 to the 30th of June, 1854. It will be seen the increase for the last year has been 395,892 20-95 tons.

The table, 7, which accompanies this report, exhibits our exports and imports for the same time; and the table, 8, which also accompanies this report, exhibits the sums received into the treasury from customs, public lands, miscellaneous sources, including loans and treasury notes, and the tariff, and particular price of the public lands under which the same was received; also the annual expenditures during the same period. From the table of exports and imports it appears the imports are $26,321,317 in excess of the exports, no account being taken of the precious metals brought in by emigrants. The profits on our exports, and the freights earned by our ships in foreign trade, ought to more than cover this excess. The exports include over $38,000,000 of specie and bullion exported; but, whilst specie and bullion are products of labor in our mines, they rank with any other product, and must enter into our foreign trade as articles of commerce, and can have no prejudicial effect upon the great interests of the country. These tables combined, exhibit the growth of our commercial marine, of our exports and imports, and the receipts and

expenditures of our government, and prove that the receipts into the treasury are sufficient to meet all reasonable expenditures, discharge the public debt, and allow a reduction of the rate of taxation, with almost a certainty that our increasing commerce will give an increase of revenue equal to the reasonable demands of the future.

Therefore, I feel it necessary, again, to call the attention of Congress to the propriety of reducing the revenue from customs, so that no more money shall be received into the treasury than is required for an economical administration of the government. The reduction proposed in my former report, as carried out by the bill prepared in this department, and the reduction proposed in the bill, prepared and reported by the Committee of Ways and Means of the House of Representatives, would each have effected the object of bringing the receipts from customs to the proposed revenue standard.

The present tariff has eight schedules, or different rates of duties, as follow: The first of 100 per cent., the second of 40 per cent., the third of 30 per cent., the fourth of 25 per cent., the fifth of 20 per cent., the sixth of 15 per cent., the seventh of 10 per cent., and the eighth of 5 per cent. The bill prepared by the Committee of the House of Representatives has five schedules, as follow: The first of 100 per cent., the second of 20 per cent., the third of 15 per cent., the fourth of 10 per cent., and the fifth of five per cent. And the bill prepared at this department, and which is substantially the one reported by the minority of the Committee of the House of Representatives, has but two rates of duty: The first of 100 per cent., and the second of 25 per cent. There are difficulties in the execution of the present tariff growing out of the required classification under the eight schedules; and these difficulties continue to increase by the acts of the manufacturers in assimilating one class of goods to another, and in ascertaining the material of chief value in the fabrics. The difficulties would be reduced under the bill of the committee, and would entirely disappear under that proposed by the department.

The bill of the committee, with the tables herewith annexed, exhibits the revenue from customs for the fiscal year ending June 30, 1853, and what has been the revenue under the present tariff for the average of six years, including 1853, and what would have been the receipts for the same periods under the bill of the committee, and under the one recommended by this department. These tables only include the enumerated articles in the bill of the committee, leaving the sum of about $2,000,000 of revenue from unenumerated articles; but they are sufficient to explain the character of the present tariff, the one proposed by the committee, and the one by the department.

Herewith is also presented exhibit 10, containing the free list proposed by this department, to which is added the English tariff on the same articles; from which it will be seen that the English tariff makes most of these articles free; and, as far as these articles are used in the arts and manufactures, most of them are free of duty under the laws of other manufacturing nations. Under the English tariff, the raw material used in the arts and manufactures have been made free of duty, whilst our tariff of 1846 imposes on those articles heavy duties; and thus, to the extent of the duty on the raw material, the English manufactnrer has a decided advantage over manufacturers of

the United States in the markets of other nations, whilst the effect of the tariff of 1846 is reduced in our own markets. In the revision of the tariff, for the purpose of reducing the revenue, it was deemed expedient and proper to take away the advantages accruing to the manufactures of other countries, under their free list, by making the same articles free under our laws, except as to the article of wool, and as to that article, on the coarser wools. Under the reciprocity treaty, wool from the British provinces will be admitted free of duty. In 1853, the importations of wool and woolen goods amounted to over $30,000,000, and the wool and the value of the wool in the manufactured article, amounted to at least $10,000,000. This was over and above the amount produced in the country, and afford satisfactory evidence that sufficient wool is not produced in the country for its consumption. The consumption of wool in the United States for the year 1853, is estimated at 200,000,000 pounds, of which 60,000,000 is the production of the country, and 21,000,000 imported as wool, and the balance of 119,000,000 imported in manufactures of wool.

The proposed addition of articles of general consumption to the free list, such as salt, &c., was deemed more questionable, but was made because it seemed to have had the sanction of Congress and the people, as to tea and coffee, and it was thought would leave the operation of the tariff laws more equitable in their bearing upon all sections of the country than a general reduction on all articles. The addition of unadulterated wines was made to promote our commercial intercourse with wine-producing countries.

The present tariff, the bill of the Committee of the House of Representatives, and that of this department, impose the like duty of 100 per cent. on spirits imported. The bill of the committee reduces the schedules of the present tariff from 40, 30, and 25 per cent. to 20 per cent., retaining the 15, 10, and 5 per cent. schedules, with some transposition of articles from one schedule to another; whilst that of the department imposes a duty of 25 per cent. on all articles not made free; most of the articles in the 15, 10, and 5 per cent. schedules of the present tariff having been added to the free list, there being no just reason why the articles not added to the free list should not pay the higher rate of 25 per cent. The table, 11, which accompanies this report, exhibits the amount that would have been collected for the year 1853 under the present tariff, the bill of the committee, and that of the department, and what would have been collected under each schedule of the bill of the committee, and affords evidence that the 5th schedule will not pay the expenses of collection. Indeed, it is believed the advantages of these schedules will be counterbalanced by the increased difficulties and expense of collection. Whether the general rate should be 20 or 25 per cent., is a question of some doubt. It was thought that a reduction to 20 per cent. might have the effect of increasing the revenue by increasing the importations; whilst the duty of 25 per cent. would not probably have that effect. A question of greater difficulty was, whether the rate of 40 per cent. should not be retained on manufactured and adulterated wines, and whether silks and some other sumptuary articles should not be added to that schedule. Upon mature reflection, I am fully satisfied that the schedule of 40 per cent. should have been retained, keeping in it wines not made free, and ad-

ding to it silks of all kinds, laces of all kinds, millinery of all kinds, and other sumptuary articles; and I now recommend that, in revising the tariff, such a schedule, specifying the articles, be added.

The table, 12, which accompanies this report, exhibits the articles manufactured in the United States, which have formed a part of our exports, for the years 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, and 1854. It will be seen from this table that there has been a great increase in the annual export of articles manufactured in this country. It may be fairly calculated that the $26,000,000, and upwards, of manufactured articles exported during the fiscal year 1854 will continue gradually to increase, until the manufactures of the United States shall constitute a fair proportion of our foreign exports.

In recognising, as I do, the principle that duties should be levied for revenue, and not for protection, I have considered it no departure from the principle to counteract the legislation of other countries, and make the same articles free under our laws that are free under theirs; knowing, also, that there never has been a tariff law enacted, under the constitution, in which some articles were not allowed to be imported free of duty.

The table, 13, which accompanies this report, exhibits duties to the amount of $1,524,457 40 on the articles made free by the reciprocity treaty with Great Britain during the fiscal year 1854; to which extent the annual revenue from customs will thereby be reduced.

In my former report a repeal of the fishing bounties was recommended, for the reasons there referred to. That recommendation is renewed, and the subject of drawback duties on refined sugar is recommended to the consideration of Congress. The same principle would require like drawbacks on all exported articles on which there is a duty on the raw material used in their manufacture.

The reports of the First, Second, Third, Fourth, Fifth, and Sixth Auditors, and of the First and Second Comptrollers, and the Commissioner of Customs, which accompany this report, numbered from 14 to 22, inclusive, exhibit a fair statement of the operations and condition of their respective offices. They are all in good order, and the current business is promptly, and, it is believed, correctly done; and, besides, considerable progress has been made in closing the large unsettled balances that stood open on the books of the treasury, as stated in my former report. That report stated the outstanding balance on the 1st of April, 1853, at . . . $132,521,704 09

And there had been settled, up to the date of that report 30,500,154 50

Leaving $102,021,549 59

Since the date of that report, this sum has been reduced by settlements, collections, &c., . 74,438,400 97

Leaving yet unclosed $27,583,148 62

Under the act of 1853 there has been $16,152,170 of silver coined at the mint in Philadelphia and branch mint at New Orleans, and circulated at Philadelphia, New York, Boston, Detroit, Chicago, Baltimore, Washington, Richmond, Norfolk, Charleston, Savannah, New-

Orleans, St. Louis, Jeffersonville, Cincinnati, San Francisco, and Pittsburg; and furnished to citizens at various other places. This has tended to keep a sound currency for change in circulation, and afforded great convenience to the public; but the circulation of large amounts of small bank notes has contracted the benefits of the silver change in many places, or driven it away, or tied it up in the pockets of the people. The full benefit of silver coinage for change can never be realized whilst small bank notes are encouraged under bank charters, and made current by the patronage of the community.

These tables give some data from which an estimate may be made of the increasing amount of gold and silver coin retained in the country. The table, 34, with the remarks annexed, which accompany this report, exhibits estimates made by Secretaries of the Treasury and others, of the amount of gold and silver coin in the country at different periods, and gives the amount on the 30th of September, 1854, at $241,000,000, which is believed not to be a high estimate. Of this sum there was about $60,000,000 in the banks, and $26,000,000 in the United States treasury; the rest being in circulation amongst the people, or hoarded up.

It appears from the report on the banks from this department, submitted to Congress on the 6th of May, 1854, that in 1850–'51 there were 879 banks in the United States, with a capital of $227,807,533, and in 1853–'54 there were 1208 banks, with a capital of $301,756,071, being an increase of $73,948,538. In 1850–'51 the circulation of the 879 banks was $155,165,251, deposites $128,957,712, due to other banks $46,411,928, and together $330,539,891; and in 1853–'54 the circulation of the 1208 banks was $204,689,207, the deposites $188,188,744, and there was due to other banks $50,322,162, and together $443,200,113, making an increase of $112,660,222, with specie in their vaults in 1850–'51 of $48,671,048, and in 1853–'54 of $59,410,253, being an increase of $10,739,205. These tables exhibit a bank circulation of $204,689,209, against the $241,000,000 of gold and silver in the country. The independent treasury of the United States, receiving and paying for the fiscal year 1854 more than $75,000,000 in the current coin, has kept up the demand for it, and prevented the large bank circulation from obtaining the mastery, and driving the constitutional currency from the country. In our table of exports we find an increase in the export of coin over the previous year, but not exceeding the produce of our mines. This increase may be, in part, accounted for by the large redemption of the public debt held abroad, and the bank circulation, a large part of which was in small notes circulated at a discount in places remote from the issuing bank, and forcing the better currency of gold and silver out of the market.

Arkansas Statistics.

STATEMENT, showing each species of property taxed in the State and the separate value of each, the total value of property taxed and the amount of taxes charged thereon for the years 1847, 1848, 1849, 1850, 1851, 1852, 1853, and 1854. From the county of Green no return has been made for the year 1847, and no return has been made from the counties of Searcy and White for the year 1852, nor has any returns been made from the counties of Fulton, Arkansas, Lawrence, Monroe, and Polk, for the year 1854.

Years.	Number of persons liable to pay a poll tax.	Value of lands and improvements taxed.	No. of town lots taxed.	Number of slaves over 5 and under 60 years of age taxed.	Value of slaves over 5 and under 60 years of age taxed.	No. of saw-mills taxed.	Value of saw-mills taxed.	No. of tan-yards taxed.	Value of tan-yards taxed.	No. of distilleries taxed.	Value of distilleries taxed.	Household furniture over $200 taxed.	Number of pleasure carriages taxed.	Value of pleasure carriages taxed.
1847.....	20,176	$12,502,327 43	7,573	24,986	$9,768,421	112	$72.613	75	$20,664	48	$3,864	$41,273	220	$27,405
1848.....	22,336	13,328,762 82	8,213	27,164	10,682,179	121	83,370	74	21,330	46	4,123	39,035	235	29,575
1849.....	25.085	15,242,652 89	8,903	30,133	11,856,711	131	81.171	92	24,945	51	4,239	42,685	248	32,057
1850.....	27,844	16,207,021 11	11,230	32,996	13,671,201	148	100,430	94	28,330	31	2,680	41,169	313	37,886
1851.....	31,352	17.496,826 00	12.592	34,687	16,253,453	173	129,840	88	30,925	50	3,998	53.665	430	49,344
1852.....	30,885	17,962,017 00	28,488	48,491	17,193,132	202	147,906	89	23,023	44	4,140	58,379	525	65,757
1853.....	33,374	21.800.648 00	14,783	38,691	20,177,016	192	168,905	103	30,186	50	3,795	66,535	722	84,722
1854.....	30,393	22,346,427 00	13,898	40,612	22,728,825	198	174,535	84	24,200	35	2,946	66,465	773	97,496

STATEMENT, &c.—Continued.

years.	Number of mules over 2 years old taxed.	Value of mules over two years old taxed.	Number of jacks and jennies over 2 years old taxed.	Value of jacks and jennies over 2 years old taxed.	Value of all goods, wares, and merchandize of merchants and commission merchants, &c., taxed.	Money loaned at interest bey nd amount over which interest is paid taxed.	Capital in steamboats, ferries and toll bridges taxed.	Value of gold watches and jewelry of all kinds taxed.	Capital employed in manufactories taxed.	Peddlers of merchandize licenses.	Total amount of taxable property.	Total amount of State tax.
1847.....	4,819	$196,779	314	$17,831	$1,311.916	$103,312	$19,184	$48,245	$10,900	700	$27,178,875 43	$70,498 72
1848..... ..	5,259	233,390	276	21,368	790,426	122,936	29,648	52,173	8,280	200	28,904,596 88	75,178 17
1849.....	6,542	295,989	316	27,150	1,782.304	139,082	20,885	58,147	5,362	750	33,406,612 99	87,936 26
1850..... ..	7,359	364,594	354	36,135	1,266.423	162,499	23,863	54,963	19.628	125	36,317,832 74	97,003 87
1851.....	8,467	477,254	454	50,371	2,927.344	261,158	14,800	80,371	27,681	175	42,939,515 00	89,637 70
1852..... ..	9,747	569,448	546	63,663	1 090,760	306.572	22.253	93,045	13,835	25	42,900,080 00	92,970 77
1853.....	11,462	712,637	570	72,607	3,257,405	380,848	65,422	97.096	44,950		53,433,853 00	140.810 01
1854..... ..	11,894	873,873	554	74,603	1,385,047	405,705	61,945	116,303	16,220		55,377,384 00	146,488 28

Number of acres of land taxed in 1854	5,025,926
Value of town lots taxed "	$2,535.170
Number of cattle over 2 years old "	161,902
Value " " "	$1,701,120
Number of horses and mares over 2 years old taxed in 1854	49,213
Value " " " " "	$2,766,504

The total population of Arkansas according to the census of 1854 is 247,112 against 209,897 in 1850.

It will perceived from the foregoing tables that the value of taxable property in the State has increased more than 100 per cent. since 1847 —a period of eight years.

STATE DEBT OF ARKANSAS.

The total amount of principal and interest of State bonds sold by the State Bank remaining unpaid on the 1st of October, 1854, as stated by the Auditor, was $1,657,553. The assets of the Bank, according to the opinion expressed by the Governor in his message, will be sufficient to reduce this debt to less than $1,000,000.

It appears that the State was indebted, on 1st October, 1854, to the amount of $2,649,856 31, on account of bonds issued in behalf of the Real Estate Bank.

We extract the following account of this debt from the message of Gov. Conway:

The State of Arkansas issued to the Real Estate Bank of the State of Arkansas, 1,530 of her bonds, each for $1,000, and bearing interest at the rate of six per cent. per annum. By the sale of these 1,530 bonds, the bank obtained her banking capital, amounting to one million five hundred and thirty thousand dollars.

By the provisions of the charter, the bank was bound to pay the interest and also to redeem the bonds. The stockholders, 180 in number, mortgaged to the State of Arkansas 141,980 acres of land, valued by commissioners under oath, at $2,603,932 32, as an indemnity to the State and the holders of these bonds, for the payment by the bank, of the interest and the redemption or payment of the bonds. It is represented that the bank paid the interest on these 1,530 bonds up to the first day of July, 1841, and that no interest has been paid by the bank since that date.

Under the act to establish the western branch of the Real Estate Bank, the State issued to that institution 500 more of her bonds, each for $1,000, bearing interest at the rate of six per cent. per annum; and the stockholders—100 in number—under this act, mortgaged to the State of Arkansas 65,121 acres of land, valued by commissioners under oath, at $776,840 06, as an indemnity to the State and the holders of the bonds, for the payment by the bank of the interest, and also for the payment or redemption of these bonds when due. By the terms of the charter, these bonds could not be disposed of at less than par, but the bank, without authority and in violation of law, hypothecated them to the "North American Trust and Banking Company," of New York, on the 7th day of September, 1840, and only obtained upon the five hundred bonds, the sum of $122,389 77. These hypothecated bonds have never been returned to the State, but by the illegal acts of the bank, have been placed beyond her control.

On the 2d day of April, 1842, by a deed of assignment, the assets of the bank amounting, as stated, to $2,405,966 15, were placed in the hands of trustees. When the deed of assignment was made, besides the principal bank at Little Rock, there were four branches of the Real Estate Bank; one at Washington, one at Columbia; one at Helena, and the other at Van Buren. Before the assignment, the State, under the charter of the bank, had two directors at the principal bank and two directors at each of its branches, to guard and protect her interests. But by the deed of assignment, the State was deprived of her representation in the bank. Every officer or agent of the State was and has been excluded. The trustees of the Real Estate Bank and their two officers, the attorney and the cashier and secretary, have had control and management ever since the 2d of April, 1842, of the large fund of assets, stated at two millions four hundred and five thousand nine hundred and sixty-six dollars and fifteen cents, as well as the interest, which, from time to time, accumulated on the debts during this period of more than twelve years and a half. The notes of individuals to the bank drew interest at the rate of eight per cent. and under certain circumstances ten per cent. per annum. The State bonds sold by the bank bear interest at the rate of six per cent. per annum. The liabilities of the bank on the second day of April, 1842, were stated to be $2,230,986 59, being $174,979 56 less than the assets on that day stated to have been placed in the hands of the trustees under the deed of assignment.

The Executive has no official report or information from the bank, showing all its present liabilities and the amount of assets now remaining unexhausted. But it is believed, that if the true condition of the bank were known the present liabilities would be near a million of dollars greater than they were on the 2d day of April, 1842. If this be so now, and if the trustees and officers received $174,979 56 more of assets than the bank owed on the 2d day of April, 1842, certainly the people af this State, and particularly the stockholders, who mortgaged lands to secure the State and bondholders against loss, are deeply interested in having a full explanation and a true statement of the cause of this great deficiency. It seems to me that the interests, credit and honor of the State are too deeply involved, for any officer or legislator of the State to do any act which would tend to suppress or delay such action as is necessary to obtain a full and complete explanation, let the responsibility and accountability fall on whomsoever it may.

Not one of the 1,530 bonds sold by the bank, has been redeemed and surrendered to the authorities of the State. But by a statement of the cashier and secretary, shown in statement marked "O," in the Auditor's report, it appears that on the first of October, 1854, the trustees had in their hands 179 of these bonds, and that the interest on the bonds and coupons taken up, amount-

ed to $143,160, leaving unpaid by the bank 1,351 bonds, upon which the interest unpaid by the bank amounted, on the first of October, 1854, to $1,073,190. But by information from the Treasury Department of the United States, it appears that the sum of $41,947 29, part of the funds which had accrued to this State from the 1st day of January, 1841, to the first day of January, 1853, on account of the 5 per cent. of the net proceeds of the sales of public lands within the State, and on account of the distributive share of the proceeds of the public lands, under the act of Congress of 4th September, 1841, had been retained at the United States Treasury, and applied before the 1st of October, 1854, towards interest due on 500 bonds of this State, which had been issued to the Real Estate Bank, and which are held by the Secretary of the Treasury in trust for the benefit of the Smithsonian Institute. Therefore the real amount of interest due on the 1st of October, 1854, on the 1,351 bonds not taken up by the bank, was $1,031,242 71, making, when added to the amount of the bonds, $2,382,242 71.

It also appears that the bank is indebted for $122,389 77, obtained on the 7th September, 1840, from the North American Trust and Banking Company, on the 500 bonds which the bank hypothecated, and for the interest on the money up to the 1st October, 1854, in the sum of $225,666 31, which added to the 2,382,242 71, makes a debt of $2,607,909 02, on account of the Real Estate Bank of the State of Arkansas on the 1st day of October, 1854. The bonds sold by this bank will not be due until the 26th day of October, 1861.

By bad management of the banks the faith and credit of the State have received a wound which has retarded her prosperity; but by judicious administration of our public affairs time will heal the wound again.

The State of Arkansas will never repudiate her just debts. She will honestly pay them all whenever she can command the means. When the bonds of the State were issued to the Real Estate Bank of the State of Arkansas, it was never intended that the people should be taxed to pay the bonds or the interest on them, but on the contrary, as required by law, the stockholders, (for security to the State and bondholders for the payment of the bonds and the interest on them) mortgaged to the State 207,101 acres of land, valued by commissioners, under oath, at $3,380,772 38. These lands embrace many of the best and most valuable plantations in the State. The State has not yet resorted to these mortgaged lands to raise money to pay the interest due on the bonds, and it is deemed safe policy to let them remain undisturbed until the large amount of assets placed in the hands of the trustees, under the deed of assignment, shall have been accounted for and every dollar which can be realized from the assets, sacredly applied towards paying the debts of the bank. After the assets shall have been accounted for and so applied, the balance of the

debt could be ascertained and proper measures adopted to secure the honest payment of every dollar of it without resorting to taxation for that purpose.

The Governor says: The State owes no other debts but small ones, which by the 15th May, 1855, can all be paid from the ordinary revenue in the State Treasury, in gold and silver.

An act directing the Attorney General to file a bill in chancery to divest the Trustees of the Real Estate Bank of the assets of that institution, was passed by the Legislature in January, 1853, and suit has been commenced, as we learn from the message, praying among other things that the assets may be realized and applied to the payment of the debts. But seeing the debt is so small compared with the ability of the State to pay, it does seem to us that it would be much better policy for the legislature to devise a plan by which the credit of the State could be restored without delay than to wait until a decree can be obtained in chancery and the assets applied under its direction. The State is about to enter upon an extension system of public improvement, and with a view to that object the restoration of her credit should be regarded as the initiatory step.

SWAMP LANDS AND LEVEE IMPROVEMENTS.

We collect the following facts relating to the Swamp lands and Levee Improvements from the Governor's message and other public documents. Under the provisions of the act of Congress, approved Sept. 28, 1850, the Surveyor General has recommended for confirmation to the State 8,464,943 acres as swamp and overflowed lands; and up to October 1, 1854, the Secretary of the Interior had confirmed to the State and, caused to be certified, to the Governor 5,567,051 acres. The Governor states in his message that "it is safe to estimate that the State is entitled to, and will obtain, in all at least 8,000,000 acres under the act of Congress."

The amount of swamp land sold or appropriated to the levee improvement is stated at 2,857,640 acres. During the last 2 years 3,940,320 cubic yards of levee has been received by the commissioners; and it is stated that "the Board of Commissioners have caused to be levied, and secured from overflow, almost the entire portion of the State fronting on the Mississippi river, and a large portion of the Arkansas river, and considerable portions elsewhere in the State."

The Governor, very wisely as we conceive, recommends "that 2,500,000 acres of swamp land be invested in railroad stocks of the State to constitute a swamp land fund, to keep the levees and other works in repair. This quantity he proposes to divide among the several enterprises in the following manner, viz: 1,000,000 to the Cairo and Fulton railroad, 500,000 to a branch of the Cairo and Fulton road from Little Rock to the Mississippi, 500,000 to a road from Little Rock to Fort Smith, and 500,000 to the Mississippi, Ouachita and Red River railroad.

COMMERCIAL DEPARTMENT.

Commerce of the Crimea.*

Some interest will be felt in knowing the nature and importance of the commercial relations kept up by the Russian province where the allied armies have already obtained a footing. The following sketch will give some idea on the subject:—

Let us first of all remark that the situation of the Crimea is admirable, situated, as it is, between the Black Sea and the Sea of Azoff—that is to say, between the Danube on the west, the Dnieper on the north, and the Kuban on the east, all grand commercial affluents of the European continent, in its eastern portion, and of southern Russia, as likewise of the Caspian basin.

No position could be better for carrying on the international transactions of this part of the globe. The Crimea is, moreover, specially favored in its interior by mildness of its climate and by the fertility of a large portion of its territory, which is susceptible of every culture. In 1835, Mr. Schnitzler estimated its extent at 1,646 square miles, and its population at 400,000 inhabitants, about 100,000 of whom are Tartars — a race which is dwindling away and disappearing before the increase of the Christian population.

Corn, wine, cattle, wool, pelts and furs, hides, hemp, honey, oil, salt, and some fisheries—such are the chief elements composing the wealth of the land, where a transit trade also exists, since here corn and grain, oleaginous seeds, tallow and grease, tobacco, silk, eastern tapestry, and the like, are brought for barter with the stuffs, sugar, hardware, and other articles wrought in Europe, more especially in Russia itself.

Corn constitutes the bulk of the exports from the Crimean harbors — these harbors being adjuncts, we may almost say dependents, on the harbor of Odessa, that granary of the Levant, or rather of southern Europe. According to the official reports for 1851 from the government of Taurida, the corn harvest had increased to 2,568,497 hectoliters. Ten years before it was hardly 1,000,000. It is particularly in the district of Berdiansk, peopled in part by foreign settlers, that the culture of the cereals is most developed, and it is thought that the entire basin of the Crimea, with that of the Sea of Azoff, may supply Commerce annually with 5,000,000 or 6,000,000 hectoliters. Moreover, the Crimea, in 1851, was found to possess nearly 2,000,000 sheep, half of which were fine-wooled, 248,260 head of horned cattle, and 85,700 horses.

The salt mines of Perekop and Eupatoria have some celebrity, and, although very inadequately worked, are a valuable source of

* Translated from the *Journal des Debats.*

wealth to the country. It is also well known what an importance the culture of the vine has acquired in the Crimea, especially the vineyards of Simpheropol, Yalto, and Theodosia. In 1851, their yield amounted to 83,798 hectoliters. The entire vintage of the Crimea — the greater part of which is consumed in the country, and the remainder of which is sold to customers in the provinces of southern Russia—may amount, it is said, to double the figure given above, that is, about 160,000 hectoliters.

The wines exported from the Crimea are, in general, of a secondary quality, and are chiefly used, like those from the Caucasus, for mixing with other wines or with other preparations. The rich vineyards of Prince Woronzoff are much praised. They yield a sparkling wine, something like Champagne. Brought originally from Hungary, the Rhine, and Burgundy, the plants to which the Crimea is now indebted for its wines have almost superseded the indigenous vine of the peninsula. M. de Tegoborski says that the Taurida possessed, in 1848, 35,577,000 vines, a number six times larger than what grew there sixteen years before. The Russian government has at all times made great efforts to develop the culture of the vine in the Crimea, and, to say the truth, it is almost the only culture which has acquired there any importance. Manufactures are at the lowest ebb. There are two or three factories for the weaving of common cloth, a few tanneries, and a few yards for making morocco (Russian?) leather, and that is all.

As for the value of the exchanges carried on in the entire basin of the Crimea and the Sea of Azoff, we will give the figures quoted in the *Annales du Commerce Exterieur*, the best authority on the subject, since it is formed either from foreign statistics, or from the correspondence of our consular and diplomatic agents. In 1841, the estimate was :—

	Imports.	Exports.	Total.
Ports in the Crimea....francs	780,000	2,308,000	3,088,000
Ports in the Sea of Azoff.....	5,208,000	22,088,000	27,296,000

Ten years later, in 1851, the value of the traffic of the Crimea was only 1,747,000 francs, a result showing a great diminution, and for the ports in the Sea of Azoff, 34,084,000 francs, which, on the contrary, shows a great increase. Kertch, placed on the straits separating the Crimea from the Transcaucasian provinces, and Taganrog, situated quite at the bottom of the Sea of Azoff, count for much in this commercial total. They alone exported, in 1851, corn to the value of 7,564,000 francs—a sum almost equal to the aggregate amount from all the other ports.

We must not, however, measure the commercial activity in the ports of the Crimea and the Sea of Azoff simply by the results of the foreign trade. The coasting trade, which is there extremely active, would give almost an equal value of exchanges. The home trade is also of some importance in the Crimea, and it may be

judged of by remarking that there are seventy-nine fairs held there every year. Goods to the value of 2,494,000 roubles (nearly 9,000,000 francs) were brought to them in 1851; and what is remarkable is the fact that, with the exception of the two fairs at Simpheropol, all of them are held in the northern districts, almost exclusively peopled with Christian agriculturists. To sum up, the foreign trade of the two seas, in 1851, employed 1,561 ships, carrying 400,000 tons; and the coasting trade may well have been three times larger.

The coasts of the Crimea offer, in fact, a large number of harbors, that in all times have been eminently useful to ships frequenting these difficult and sometimes dangerous seas. The chief harbors are Eupatoria, Theodosia or Kaffa, Kertch, and Sebastopol, to which we must add, as belonging to the same sphere of commercial activity, the ports in the Sea of Azoff, viz: Berdiansk, Mariopol, Rostoff, and Taganrog. The Genoese thoroughly understood the importance of such a line of coast when, towards the end of the 13th century, they purchased, or rather took, from the Mongol-Tartars the ancient Theodosia, spread their colonies over all Taurida, covered with their ships the shores of the Euxine, and founded Kaffa, which soon became the principal center of Europe's Commerce with Asia Minor, Persia, and the Indies.

Two centuries later, the Crimea was for a long time blighted, as it were, with sloth and sterility; its cultures, its Commerce pined away more and more through atrophy, and the yoke imposed upon it by the Muscovites in 1740 was little calculated to restore it. But, thanks to the franchise granted by the Empress Catharine to its ports subsequently, the peninsula saw its prosperity rapidly return. Unfortunately, the Czar Paul, through some malign inspiration, thought he ought to protect the Commerce of Taurida by canceling this franchise, and replacing it by an oppressive system of customs, with all their restrictive regulations. Nevertheless, the Crimea has progressed by the force of things, by its own elements of vitality, by the constant growth of the Christian population. And, now that the Black Sea and the mouths of the Danube, free at last, are about to be opened to navigation, to all the transactions of the western nations, we may look upon this country as destined for great things.

"Merchants Magazine."

Treaty between the United States and Russia.

A PROCLAMATION.

BY THE PRESIDENT OF THE U. S. OF AMERICA.

Wheras a convention between the United States of America and his Majesty the Emperor of all the Russias was concluded and signed by their respective plenipotentiaries at Washington on the 22d day of July last: which convention, being in the English and French languages, is, word for word, as follows:

The United States of America and his Majesty the Emperor of all the Russias, equally animated with a desire to maintain, and to preserve from all harm, the relations of good understanding which have at all times so happily subsisted between themselves, as also between the inhabitants of their respective States, have mutually agreed to perpetuate, by means of a formal convention, the principles of the right of neutrals at sea, which they recognise as indispensible conditions, of all freedom of navigation and maritime trade. For this purpose, the President of the United States has conferred full powers on William L. Marcy, Secretary of State of the United States; and his Majesty the Emperor of all the Russias has conferred like powers on Mr. Edward de Stoeckl, Councelor of State, knight of the orders of Ste. Anne, of the 2d class, of St. Stanislas, of the 4th class, and of the Iron Crown of Austria, of the 2d class, his Magesty's charge d'affairs near the Government of the United States of America; and said plenipotentiaries, after having exchanged their full powers, found in good and due form, having concluded and signed the following articles:

ARTICLE I. The two high contracting parties recognize as permanent and immutable the following principles, to wit:

1st. That free ships make free goods—that is to say, that the effects or goods belonging to subjects or citizens of a state at war are free from capture and confiscation when found on board neutral vessels, with the exception of articles contraband of war.

2d. That the property of neutrals on board an enemy's vessel is not subject to confiscation, unless the same as contraband of war. They engage to apply these principles to the commerce and navigation of all such powers and States as shall consent to adopt them on their part as permanent and immutable.

ARTICLE II. The two high contracting parties reserve to themselves to come to an ulterior understanding as circumstances may require, with regard to the application and extension to be given, if there be any cause for it, to the principles laid down in the first article. But they declare from this time that they will take the stipulations contained in said article 1st, as a rule, when-

ever it shall become a question, to judge of the rights of neutrality.

ARTICLE III. It is agreed by the high contracting parties that all nations which shall or may consent to the rules of the first article of this convention, by a formal declaration stipulating to observe them, shall enjoy the rights resulting from such accession as they shall be enjoined and observed by the two powers signing this convention. They shall mutually communicate to each other the results of the steps which may be taken on the subject.

ARTICLE IV. The present convention shall be approved and ratified by the President of the United States of America, by and with the advice and consent of said States, and by his Majesty the Emperor of all the Russias, and ratification of the same shall be exchanged at Washington within the period of ten months, counting from this day, or sooner, if possible.

In faith whereof, the respective plenipotentiaries have signed the present convention in duplicate, and thereto affixed the seal of their arms.

Done at Washington the twenty-second day of July, the year of Grace 1854.

W. L. MARCY, [L. S.]
EDWARD STOECKL, [L. S.]

And whearas, the said convention has been duly ratified on both parts, and the respective ratifications of the law were exchanged in this city on the 31st ult., by William L. Marcy, Secretary of State of the United States, and Mr. Edward de Stoeckl, his Imperial Majesty's charge d'affairs to this Government, on the part of their respective governments:

Now, therefore, be it known, that I, Franklin Pierce, President of the United States of America, have caused the said convention to be made public, to the end that the same, and every clause and article thereof, may be observed and fulfilled with good faith by the United States and the citizens thereof.

As testimony whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this 1st day of November, in the year of our Lord one thousand eight hundred and [L. S.] fifty four, and of the independence of the United States the seventy ninth.

By the President: FRANKLIN PIERCE.

W. L. MARCY, Secretary of State.

From the New Madrid "Times."

NEW MADRID AND POINT PLEASANT TRADE.

We take this occasion to congratulate New Madrid and Point Pleasant on the acquisition of the new trade that is now turned from another direction to them.

And we cannot pass from this subject, without noticing the great advantage to the interior counties—Stoddard, Butler, Ripley, and Dunklin, in Missouri, and Green, Randolph, Lawrence, &c., in North Arkansas—derived from their new, short and commodious route to the Mississippi river.

All this vast and fertile sections of country can now find a market and a shipping place, within one or two days' drive. And a market and shipping point combining advantages to them over every other place from St. Louis to New Orleans.

They will find all they want at New Madrid and Point Pleasant, on the very best terms, combined with every facility, attention and accommodation.

Henceforth, persons desirous to pass from the East, West may cross the Mississippi river at No. 8, or at Dr. Martin's Ferry, a few miles below New Madrid, also, we learn, at Riddle's Point. We are informed all these places have *good* Ferry Boats, and give them prompt attention. And go through New Madrid county—crossing Little River at Weaversville, on into the interior, without any impediment—to South Missouri, North Arkansas, Texas, or anywhere west, unless the waters should rise, which it is hoped and delieved will not be the case until late in the season.

By the next season we have every reason to believe that this route will be completed and perfected for a permanent and constant travel, and carrying the year round.

The traders and buyers of the interior counties will be able to find supplies of any description, and on the best and most inducing terms at New Madrid and Point Pleasant.

Remember, *here* is the place to get Goods, Groceries and Bargains!

ST. LOUIS MARKET,—December 28th, 1854.

Prices of Produce,

FLOUR—last sales report $7.50 to $8 for extra.
WHEAT—sales to-day, fair to good, from $1.30 to $1.40.
CORN—last sales reported 80 cents per bushel, new gunnies.
OATS—sales 50 to 51 cents per bushel.
BARLEY—sales at $1.35 to $1.40 per bushel.
HEMP—quoted $105 to $123 per ton.
LEAD—$5.95 to $6 asked.
WHISKY—38 to 40 cents, nominal.
HOGS—$3.50 to $4.25 per 100 lbs.
MESS PORK—nominal $12 per barrel.
SUGAR—last sales reported 4¼ to 5 cents per lb.
SALT—G. A. $2.40 per sack.

JOURNAL OF PUBLIC IMPROVEMENTS.

RAILROAD FROM ST. LOUIS TO THE MISSISSIPPI RIVER BELOW FREEZING POINT, AND TO THE ARKANSAS STATE LINE.

We published the second annual report of the President of the St. Louis and Iron Mountain Railroad in our issue of last month—the entire document, containing the Engineer's report, has just come to hand. Regarding the Iron Mountain Railroad as the principal line of connection between St. Louis and the Southern States, we have felt an intense interest in the reconnoisance and surveys which have been going on for some time past in the south-eastern part of Missouri and East Arkansas, and we confess that the connections between St. Louis and the South as shown by the map are not in all respects as favorable as we could desire. To give completeness to our system of improvement, we should, if practicable, have a more direct connection with Cairo, Columbus, New Madrid, and Hickman. We have great confidence in the judgement and professional skill of the engineers, and it is manifest from their report that they have bestowed much labor upon the work, but we still feel a hope that sooner or later a nearer route to Cairo will be found than the one indicated by the map. We copy from the report the following view of the connections of the St. Louis and Iron Mountain Railroad with the South.

Southern Connections with Memphis, Helena, &c.

But however important your road is for its local uses, it is of still greater importance as a trunk road to the South. By a continuation of the road southward to Cairo and New Madrid, a connection is made with the Mississippi river below freezing point, and also with the south-eastern lines of railroad, now almost completed through Nashville to Charleston and Savannah. At the southern line of the State you connect with the Cairo and Fulton road, extending to the south-west corner of Arkansas in direction of Galveston. By this road you intersect any southern route for a Pacific railroad, and must draw, therefrom, much of the business directed to the North-eastern States.

The surveys in Arkansas for the Cairo and Fulton railroad are now complete. The route is stated generally as an easy one, not requiring grades over fifty feet to the mile, and with long stretches of level grade, and easy construction. The cost is estimated at about $21,000 per mile in running order.

An easy route for a railroad is found also along the west base of Croly's ridge, through Arkansas to Helena, connecting you ultimately with New Orleans. Another easy route for a railroad is found between the St. Francois river and the Mississippi river, to Memphis, from which place railroads are now being constructed leading to New Orleons and Mobile. This, at present, is the most important of

any of the southern connections, not only on account of the importance of the business from direct intercourse with Memphis, but also as a very direct route to New Orleans, and one on which the connections are being rapidly perfected. Of the entire practicability of a route to Memphis, there is no doubt.

In this connection, we would advise that your company order a reconnoisance of the route to Memphis, with the view of co-operation with that city to construct the road.

Another and important connection can be easily made, by extending your road to a point on the Mississippi river, opposite Columbus. The Mobile and Ohio railroad touches the river at Columbus, and is now in progress of construction at that end, and by its intersection with the Memphis and Louisville railroad, makes connection for your road to Memphis and Mobile. This connection is an important one, not only for the direct trade of the Mobile and Ohio railroad, but that the present progress of construction on these routes makes it probable that in this way the least length of railroad has to be provided for in order to accomplish the object.

These connections are shown so plainly on a general map accompanying this report, that there is no need for more extended description of them here: but distances from St. Louis may, approximately, be stated as follows:

St. Louis to		Little Rock, Arkansas,	351 miles.
"		Fulton,	477 "
"		Galveston, Texas,	767 "
"		Memphis, Tenn.,	279 "
"	via	Memphis to New Orleans, La.,	676 "
"	"	" to Mobile,	627 "
"	to	Helena,	333 "
"	via	Helena to New Orleans,	685 "
"	"	New Madrid to Nashville,	380 "
"	"	" " to Charleston,	987 "

Before describing the results of the surveys in this State, south of the Pilot Knob, we would remark, that the surveys are not so complete as to determine any positive location for the best route; but that they do demonstrate *one* entirely practicable route to the low grounds; and also that several practicable routes can be found through the section of country known as the New Madrid swamps.

After reaching the low grounds, about twenty miles south of the Pilot Knob, the construction will be comparatively very easy.

Hannibal and St. Joseph Railroad.—Chief Engineer's Report.

COL. R. M. STEWART, *President H. & St. J. R. R.*

SIR:—The line of your road having been definitely located, and all the changes made that are usually required in the corrections of the lines of a preliminary survey, it becomes my duty to make known the effect these alterations have produced in the character and value of the road.

No material change in the quantities has been effected, the correspondence between those of the preliminary surveys and the definite location being unusually close; this may be inferred from the fact, that there is no important difference in the length of the lines, and that both are within nine per cent. of an air line between Hannibal and St. Joseph.

In the following tables will be found the present effective value of the road, which by comparison with table (A) in my report, on the survey and location of the Hannibal and St. Joseph Railroad, (March 7th, 1853,) will show the exact difference in the aggregate. The principal cause of this difference, in measured miles, is occasioned by the adoption of the Bear Creek route instead of Clear Creek, at the eastern terminus.

The Equation of Whole Line by Divisions since Location, compared with Equation of Preliminary Lines.

	Measured Miles.	Relative Distance East.	Relative Distance West.	Average Relative Distance.
First Division	25	33.3	40.6	*35.7
Second Division	25	33.2	36 2	*34.2
Third Division	25	35.7	37.7	36.7
Fourth Division	31.8	56.4	58.6	57.5
Fourth Division	25	42.6	40.7	41.6
Third Division	25	37.3	48.3	39.8
Second Division	25	42.9	45.6	44.2
First Division	25	41.9	33.5	*36.3
Total	206 8–10			326
Preliminary lines	205 7–10			307 3–10
Difference	1 1–10			187 1–10

The construction of that portion of the work which was sub-let in May, 1853, embracing a subdivision from either terminus of the road, has been slowly progressing, and although at no time a very large force has been employed, still the amount of work done in the aggregate is considerable.

The amount, estimated and paid, for work done on the entire line, is in the aggregate two hundred and thirty thousand five hundred and twenty-seven 61-100 dollars, this sum including all estimates on the eastern division up to November 1st, 1854, and on the western division up to October 2d, 1854. Of this amount, the sum of one hundred and sixty-three thousand and eighty-two 92-100 dollars is due to the first subdivision west.

By reference to the estimated cost of each entire subdivision, it is found that the work done, amounts on the eastern to sixty-four per cent., and on the western to twenty-two per cent. of the whole expenditure, due to graduation, masonry and bridging.

The cause of this inequality of expenditure on the eastern and western divisions, it is thought, is well known to the Board; arising partly, from the uncertainty existing in regard to the final location of

☞ The divisions marked thus (*) are averaged with double freight towards termini.

the western terminus, and partially, from the difficulty experienced in procuring laborers on the western division, at the commencement of the work.

The second subdivision, extending twenty-five miles on either end, can be readily and speedily prepared for the superstructure, if the requisite means are provided to push the work vigorously, as they each comprise the lightest and cheapest work on the line of road.

And it may not be irrevalent at this time to say, that it is a matter of almost vital importance to the completion of the road within the time specified, that the iron should be laid, and communication opened between the interior counties and the Mississippi and Missouri rivers. In these counties about midway between the termini of the road is to be found the heaviest work on the road, and by far, the least facilities for carrying on the work with rapidity. The country though possessing great natural advantages is thinly settled, and its immense agricultural and domestic capacity, being imperfectly developed, it is illy prepared to sustain the large and sudden influx of unproductive labor which must necessarily be placed in it during the progress of the work.

If a communication could be opened immediately with that country from either terminus, the employees of the company engaged on the work would be relieved in a great degree, from a precarious dependence upon a thinly settled country for supplies, consequently, the work could be pushed forward with greater certainty and economy.

In my former report, of March 7th, 1853, predicated upon data obtained in 1846, it was supposed, that the annual receipts of the Hannibal and St. Joseph Railroad would amount to $600,000; making no allowance for any subsequent increase of population that might have been reasonably expected. In making examinations recently of the census of 1850, and the ratio of increase in population and products, the results are exceedingly interesting and gratifying to the friends of the road. The following is an exhibit of the

Population and Cultivated Land in 1850, in Counties Tributary to Hannibal and St. Joseph Railroad.

Counties.	Inhabitants.	Cultivated Land, Acres.	Counties.	Inhabitants.	Cultivat'd Land Acres.
Atchison	1,678	6,477	Grundy	3,006	13,699
Holt	3,957	16,640	Mercer	2,691	10,141
Nodaway	2,118	9,576	Dodge	375	4,106
Andrew	9,433	40,447	Putnam	1,636	2,005
Buchanan	12,975	56,897	Sullivan	2,983	14,108
Platte	16,845	94,496	Linn	4,058	18,851
Clinton	3,786	26,244	Chariton	7,514	34,651
Clay	10,332	71,905	Randolph	9,439	62,420
DeKalb	2,075	8,856	Macon	6,565	33,329
Gentry	4,248	14,246	Adair	2,342	12,243
Harrison	2,447	6,44	Schuyler	3,287	16,121
Daviess	5,298	17,919	Scotland	3,782	23,461
Caldwell	2,316	14,707	Knox	2,894	18,845
Ray	10,373	46,704	Shelby	4,253	22,522
Carroll	5,441	22,437	Monroe	10 541	74,792
Livingston	4,247	23,488	Marion	12,230	62,145
		Total		175,155	920,921

By taking the vote of 1850, and comparing it with that of 1854, the ratio of increase is found to be ten per cent. per annum, consequently, the increase of population in 1857 will be 297,753, and the increased number of acres in cultivation 1,565.565. There will then be in three years from this time, a population within the sphere of this road of 297,763, and the land actually in cultivation 1,565,565 acres, while the total country that will be drained by this outlet, without taking into consideration the vast trade of Kansas and Nebraska, is 11,000,000 acres, a territory equal in aggregate to the States of Massachusetts, Rhode Island and Connecticut. The following table based upon the above data, exhibits the

Anticipated Traffic of Hannibal and St. Joseph Railroad in 1857.

According to the above statement, there will be 1,565,565 acres of cultivated land, and allowing that directly or indirectly, there will be shipped 100 pounds from each acre, we have for the produce tonnage 78,278 tons, which will be transported on an average 100 miles, at 3 cents per ton per mile.....	$234,438
Estimating that the merchandize imported, including dry goods, groceries, iron, &c., will amount to 40,000 tons, and be transported on average distance of 150 miles, at 5 cents per ton per mile.....	300,000
The passenger trade being nearly equal to the tonnage on all roads, will probably be so on this, as the Nebraska, Kansas, Utah and Pacific emigrants must pass over it; we will, however, assume the passenger traffic, at 90,000, averaging 100 miles at $3 00.....	270,000
Three millions bushels of coal are annually consumed in St. Louis. It is estimated, that 250,000 bushels coal will be delivered at each end, with an average transport of 75 miles, making 20,000 tons, at $1 50 per ton.....	30,000
It is estimated that the lumber trade will amount to 20,000,000 (ft. b. m.) or 30,000 tons, with an average transport of 150 miles, at 2 cents per ton per mile.....	90,000
Total receipts.....	$924,834

The Galena and Chicago Railroad extends from Chicago west 130 miles into the interior, occupying a position very similar, as regards its effect upon the business of the road, to the Hannibal and St. Joseph Railroad. The country tributary to it contains about five millions of acres. By the last report of the officers of the Company, its annual receipts were $899,000; the working expenses $359,000.

In 1850, the number of inhabitants contained in the above mentioned limits, was about two hundred thousand, and the number of acres in cultivation, one million.

With reference to the above estimate of the probable receipts of the Hannibal and St. Joseph Rail Road, it may be proper to remark that the population of North Missouri was retarded by various causes, from 1840 to 1850. Previous to 1840, the increase had been nearly two hundred per cent., in the interval it fell off to seventy-five per cent. This was occasioned by the influx into Iowa, Wisconsin, and California. Iowa having increased from 1840 to 1850, three hundred and forty-five per cent., and Wisconsin eight hundred and eighty-seven per cent. We have only assumed an increase of one hundred per cent. for ten years, or ten per cent per annum; but it is not unreasonable to suppose that the very fact of the construction of this road will increase it fourfold. It is apparent that the increase will be beyond all precedent, for it passes through a finer country than can be found in either of the above States, inferior only in its facilties for

communication with a market; even the agitation of the question of the improvement in its incipiency, produced an immediate and palpable effect. The graduation bill, a new element of increase in the population and settlement of the country, is every day opening new farms, giving increased value to the lands in the rail road districts. The political excitement growing out of the Kansas and Nebraska question is settling these regions with unprecedented rapidity, and will have an important influence upon the trade of the road. Already, great interest is expressed by the settlers in these territories, in the progress of this work, regarding it as their natural outlet east.

Having ascertained the probable amount of business that will be done on the road, it becomes necessary to ascertain the working or operative cost, and deduct it from the total receipts; this is, of course, based upon the tonnage and the known cost of transporting one ton per mile, on other roads, with proper allowance for this road in 1857.

Working Expenses.

Produce,	78,278	tons,	average	100	miles	each ton,	7,827,800
Merchandize	40,000	"	"	150	"	"	6,000,000
Passengers,	90,000	"	"	100	"	each	9,000,000
Coal,	20,000	"	"	75	"	"	1,500,000
Lumber,	30,000	"	"	150	"	"	4,500,000
Total							28,827,800
At one and a half cents per ton per mile							01½
Total operative cost, including repairs							$432,417
Deduct working expenses ($432,417) from gross receipts							924,834

Construction.

Contract cost at $23,000 per mile	$4,738,000
21,680 tons iron at $45 extra per ton	975,600
Hard pan and rock	300,000
Right of way	50,000
Land expenses (contingent)	50,000
Engineering at $750 per mile	155,100
Total cost	$6,268,700
Net receipts	$492,741

By the above calculation, the dividend is nearly eight per cent. upon the actual expenditure of $6,268,700. But the dividends paid upon the actual cost, to the Stockholders, will probably exceed twenty per cent., and at the end of twenty years thirty per cent.

For instance:

The bona fide stock that will be paid in, is	$1,500,000
State credit	1,500,000
The sale of 600,000 acres R. R. lands will certainly yield	3,268,700
Equal to the total cost	$6,268,700

From the net dividend, $492,417, take $90,000, the interest on the State bonds, and $75,000 for a sinking fund for the redemption of bonds, there remains $327,417 for dividends on $1,500,000 per annum for twenty years, or over 21 8-10 per cent., and at the expiration of twenty years, even if the traffic should not increase, the whole receipts, $492,417, will make a dividend of over 32 8-10 per cent.

If these views are correct, (and I think they can be sustained,) this road cannot fail to be remunerative to the stockholders; if it should

even pay but four per cent., still the stockholders will receive ten per cent. on their investment, and with reference to the amount of transportation on the road, it should be borne in mind that I have not taken into account the numerous branches that will be undoubtedly constructed, and which will vastly increase the resources of the road, and enhance its receipts, nor the effect of its direct eastern connections, to which I have adverted in a former report.

Respectfully your ob't serv't,
JAMES M. BUCKLIN.

TO RAILROAD COMPANIES.

A view of the great number and extent of railroads which have been undertaken in the Mississippi valley, has led us to conclude that the interest of this important branch of public economy would be promoted by fixing upon some paper or periodical at a convenient point as a medium of communication between the various railroad companies and the public.

We have, ever since the commence of this Journal, in 1848, kept constantly in view the railroad movements throughout the United States, and have published such facts as we deemed interesting and profitable to our readers; but having no direct communication with the officers of the various companies, we have omitted to publish much interesting matter which appeared in the Newspapers, lest we should be led into errors, and do injustice to the parties.

Our object in addressing the railroad companies at present, is to invite them to make the Western Journal and Civilian a medium of communication between them and the public. By this means, correct information relating to the history and progress of all the railroads of this region can be obtained from one source, and be preserved in a durable form.

By reference to a map of the United States, it will be seen that when completed nearly all the great railroad systems of the Union are destined to unite at St. Louis, and consequently it must become a great market for traffic in bonds and stocks. A journal published in this city containing reliable information concerning all the public works of the Mississippi valley, would be instrumental in attracting the attention of capitalists and dealers in railroad securities to this point.

Besides, establishments for manufacturing railroad machinery are springing up at various points in the West, and it would be to the advantage of all parties—producers and consumers—to have a common and certain medium of advertising.

We submit these suggestions to the consideration of those more immediately interested in public improvements and manufactures, and respectfully invite their co-operation.

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VOL. XIII.—O. S. 7, N. S. JANUARY, 1855. NO. 2.

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Watches and Jewelry.

C. D. SULLIVAN & CO.,

JEWELLERS, Watch and Clock Makers, No. 39 South Fifth street, opposite the Planter's House. A large and well selected assortment of Clocks, Watches, Jewelry and Silver Spoons constantly on hand and for sale low. All kinds of Jewelry made to order and repairing neatly executed. The highest price paid for old gold and silver. All orders punctually attended to.

March, 1860.

PACIFIC RAILROAD.

Winter Arrangement.

ON and after the 29th of October, and until further notice, trains will run regularly between ST. LOUIS and FRANKLIN (Sundays excepted) connecting at the latter with the Stages to Manchester, Ellisville, Labadie, Washington and Jefferson City. Time as follows, to wit:

ST. LOUIS TO FRANKLIN.

Leave St. Louis at 8:30 A. M. Reach Franklin at 12:00 A. M.
" " 4:30 P. M. " " 8:00 P. M.

FRANKLIN TO ST. LOUIS.

Leave Franklin at 6:30 A. M. Reach St. Louis at 10:00 A. M.
" 2:00 P. M. " " 5:30 P. M.

The above trains stop at all the way stations.

Passengers are requested to procure tickets of the Agents, at the depots.

Extra charge for tickets purchased in the cars.

Omnibusses will leave the Planters' House corner of Fourth and Chestnut street, half an hour in advance of each train of cars, and run regularly to and from all the trains.

U. S. MAIL.—Kimball, Major & Co.'s Daily Lines of Four Horse Post Coaches, leave Franklin on the arrival of the morning trains from St. Louis and run regularly through to Jefferson City, in connection with lines West and Southwest via Versailles and Warsaw, to Springfield, Mo., and Van Buren and Fort Smith, Arkansas. For through Tickets, including Railroad fare, apply at the office, under the Planters' House, corner of Fourth and Chestnut streets, St. Louis.

F. Bartold's line of four horse Coaches, will leave Franklin every morning, on the arrival of the trains from St. Louis, connecting with the afternoon train to St. Louis. Stages of lines will run between Shawneetown and Manchester, to and from each train.

Tickets procured at R. R. Depot, on Fourth st.

JAMES M. WARD, Asst Supt.